

**DEPARTMENT OF THE INTERIOR'S
COAL LEASING PROGRAM**

HEARING
BEFORE THE
COMMITTEE ON
ENERGY AND NATURAL RESOURCES
UNITED STATES SENATE
NINETY-EIGHTH CONGRESS
FIRST SESSION
ON THE
DEPARTMENT OF THE INTERIOR'S COAL LEASING PROGRAM

MAY 23, 1983



Printed for the use of the
Committee on Energy and Natural Resources

U.S. GOVERNMENT PRINTING OFFICE

WASHINGTON : 1983

COMMITTEE ON ENERGY AND NATURAL RESOURCES

JAMES A. McCLURE, Idaho, *Chairman*

MARK O. HATFIELD, Oregon
LOWELL P. WEICKER, Jr., Connecticut
PETE V. DOMENICI, New Mexico
MALCOLM WALLOP, Wyoming
JOHN W. WARNER, Virginia
FRANK H. MURKOWSKI, Alaska
DON NICKLES, Oklahoma
CHIC HECHT, Nevada
JOHN H. CHAFEE, Rhode Island
JOHN HEINZ, Pennsylvania

J. BENNETT JOHNSTON, Louisiana
HENRY M. JACKSON, Washington
DALE BUMPERS, Arkansas
WENDELL H. FORD, Kentucky
HOWARD M. METZENBAUM, Ohio
SPARK M. MATSUNAGA, Hawaii
JOHN MELCHER, Montana
PAUL E. TSONGAS, Massachusetts
BILL BRADLEY, New Jersey

MICHAEL D. HATHAWAY, *Staff Director*

CHARLES A. TRABANDT, *Chief Counsel*

D. MICHAEL HARVEY, *Chief Counsel for the Minority*

CONTENTS

STATEMENTS

Carruthers, Hon Garrey E., Assistant Secretary, Land and Water Resources, Department of the Interior, accompanied by David Russell, Acting Director, Minerals Management Service, William D. Bettenberg, Deputy Assistant Secretary, Policy, Budget, and Administration, James M. Parker, Associate Director, Bureau of Land Management, Robert Lawton, Assistant Director, Onshore Energy and Mineral Resources, Doug Hileman, team leader and mining engineer, Wyoming regional office, David Houston, Deputy Director, Office of Congressional and Legislative Affairs, John D. Creger, minerals appraiser, Wyoming north central regional office, Neal Jacquot, economist, Wyoming north central regional office, and Orvel Gustofson, economist, Wyoming north central regional office.....	Page 163
Melcher, Hon. John, a U.S. Senator from the State of Montana	146
Metzenbaum, Hon. Howard M., a U.S. Senator from the State of Ohio	4
Murkowski, Hon. Frank H., a U.S. Senator from the State of Alaska.....	6
Peach, Hon. J. Dexter, Director, Resources, Community and Economic Development Division, General Accounting Office, accompanied by Lowell Mining, group director, Ned Smith, senior evaluator, and Edward Joseph, senior evaluator.....	9
Wallop, Hon. Malcolm, a U.S. Senator from the State of Wyoming.....	2
Warner, Hon. John W., a U.S. Senator from the State of Virginia.....	1

APPENDIXES

APPENDIX I

Attachments to Secretary Carruthers' prepared statement.....	201
--	-----

APPENDIX II

Responses to additional questions.....	685
--	-----

DEPARTMENT OF THE INTERIOR'S COAL LEASING PROGRAM

MONDAY, MAY 23, 1983

U.S. SENATE,
COMMITTEE ON ENERGY AND NATURAL RESOURCES,
Washington, D.C.

The committee met, pursuant to notice, at 10:05 a.m., in room SD-366, Hon. John W. Warner, presiding.

Present: Senators Warner, Domenici, Wallop, Nickles, Hecht, Johnston, Bumpers, Metzenbaum, and Melcher.

Also present: Gary Ellsworth, deputy chief counsel for natural resources; and Linda Mason, professional staff member for the minority.

OPENING STATEMENT OF HON. JOHN W. WARNER, A U.S. SENATOR FROM THE STATE OF VIRGINIA

Senator WARNER. On April 28, 1982, the Department of the Interior held the Powder River Basin Federal coal lease sale, one of the largest in history. During this sale, the Department of the Interior offered approximately 1.6 billion tons of recoverable Federal coal reserves for competitive leasing in southeastern Montana and northeastern Wyoming.

This sale has become quite controversial. I wrote the chairman of this committee, Senator McClure, requesting the desire on behalf of the subcommittee to hold hearings. He concurred in that, and that is the purpose of this hearing this morning.

I have studied carefully the record to date. And I must say that in my own mind, I have some questions about the propriety of some of the steps taken. But I am hopeful that the Department of the Interior can provide satisfactory answers.

I will elaborate in a more complete statement for the record, but I will now turn to my colleague, Mr. Wallop.

[The prepared statement of Senator Warner follows:]

STATEMENT OF HON. JOHN W. WARNER, A U.S. SENATOR FROM THE STATE OF VIRGINIA

On April, 28, 1982 the Department of the Interior held the Powder River Basin Federal coal lease sale—touted at the time as the largest Federal coal sale in history. During this sale the Department of the Interior offered approximately 1.6 billion tons of recoverable Federal coal reserves for competitive leasing in southeastern Montana and northeastern Wyoming.

This sale has not been without controversy, though. It has generated two lawsuits, four congressional hearings, numerous media articles and several governmental investigations.

The hearing today is to discuss the Powder River sale and its aftermath. While we will be reviewing the lease sale procedures of the Department of the Interior for the Powder River sale it is my hope that in the future the subcommittee of Energy and Mineral Resources will have the opportunity to hold oversight hearings on the whole Federal coal leasing program—which would be the first full scale oversight of the program in the last 2½ years.

The Federal coal leasing program is necessary and vital to America's overall energy strategy. The Federal Government owns one-third of the Nation's coal and indirectly affects the use of the least an additional 20 percent of the coal in the west. Coal is America's most abundant natural energy resource. Projections show that coal use in the next 20 years will increase dramatically. To prepare for this increase in the use of coal we must make sure that our coal resources are readily available to America's consuming public in the amounts necessary to meet their needs and those of the nation.

The Secretary of the Interior by statute oversees the coal leasing program. Under the Federal Coal Leasing Amendments Act of 1976 to the Mineral Lands Act of 1920 the Secretary must award coal leases by competitive bidding, but shall accept no bid which he determines is less than fair market value.

The Secretary of the Interior is a steward of America's natural resources on its Federal lands. In leasing these resources for development he must see to it that this leasing maximizes the benefits to the United States. Sometimes, it appear that the various benefits he must consider are contradictory.

It will be the responsibility of the subcommittee to access the differences of viewpoint between GAO and DOI and recommend a course of action taking into consideration the likely actions by the House of Representatives.

STATEMENT OF HON. MALCOLM WALLOP, A U.S. SENATOR FROM THE STATE OF WYOMING

Senator WALLOP. Thank you, Mr. Chairman.

The Federal coal leasing program is a vital element in this Nation's energy policy and its economic strength. The Federal lands contain some 200 billion tons of coal, about two-thirds of which is located in the Powder River Basin in northeastern Wyoming and southwestern Montana.

I, therefore, have a strong interest in assuring that the coal leasing program proceeds in a manner and pace which best serves both national, State, and local interests, meets the needs of the private sector, returns a fair economic value to the Government, protects consumer interests and is environmentally sensitive.

And those are in some instances necessarily mutually exclusive. You cannot get the best price for the Government, and at the same time protect the consumer.

During today's hearing, the committee will have the opportunity to examine some of these elements in the coal program in the context of sales which occurred in April and October of last year in the Powder River Basin.

On May 11 of this year, the General Accounting Office released a report which raised some serious questions about the Department of the Interior's handling of these sales, and in particular whether fair market value was received.

While there are a number of recommendations which merit attention, I welcome the opportunity today to more closely question them on some of their assumptions about which I have serious reservations. I also welcome the opportunity to hear the Department's views on their coal leasing program, and in particular the GAO report.

I would hope that this hearing will provide a fair forum for opinions which can legitimately differ without resorting to political hy-

perbole to this issue so easily lends itself. As to the GAO's report itself states on page 7, "the many issues surrounding this sale are technically complex, interrelated, and cannot be examined in isolation."

And later on page 11 they say, "coal valuation is inherently difficulty because of uncertain market factors, costs, and prices related to the long-term investment potential of a given coal lease."

In this context, great reliance must be placed on the judgments of the professional employees of the Department who have the expertise. I am pleased that several such employees from the North Central Regional Office in Casper, Wyo., are in attendance here today to assist Assistant Secretary Carruthers in his testimony.

As a final point, I would like to note for the committee record another quote from the GAO report, which has received but little attention in the press. And that quote is, "Notwithstanding the problems associated with the change to entry level bidding, accepted bids for the April and October sales combined totaled \$67.2 million for the 12 tracts compared to minimum acceptable bids of \$70.7 million as adjusted by Interior economists."

Based on this data, it can hardly be said that Interior got significantly less than the fair market value for their lease. In fact, the 10 tracts in the Aoril sale actually received slightly more than the minimum acceptable bid as set by the North Central Office. At that time, Interior did not have the benefit of the 20/20 hindsight provided by GAO more than 1 year later with a change in assumptions.

In that context, I believe that it is unfair to charge that Interior lost \$100 million in revenues to the Treasury because they did not use the GAO's valuation method which is not without its own criticism.

So I thank you, Mr. Chairman, and I look forward to the testimony this morning.

Senator WARNER. The Chair requested Secretary Watt to appear this morning. He informed the chairman that he was unable to attend because of prior travel plans. I asked the Secretary to confirm it in writing. He sent a letter to the committee today explaining his whereabouts and his inability to attend.

[The letter of Secretary of the Interior James G. Watt follows:]

U.S. DEPARTMENT OF THE INTERIOR,
OFFICE OF THE SECRETARY,
Washington, D.C., May 20, 1983.

Hon. JOHN W. WARNER,
U.S. Senate,
Washington, D.C.

DEAR SENATOR WARNER: Your hearing is most important to the future of energy leasing and development in America. We must manage our public resources to provide for the welfare and security of our country now and into the future. The Department's leasing programs offer public energy resources, on a planned, scheduled, environmentally prudent basis. Energy developers have and will continue to pay fair market value for bonuses, plus royalties and taxes on their production. In the interest of consumers, taxpayers, workers, and the security of our country, the energy leasing programs must be continued on an uninterrupted basis.

Due to prior travel plans, I will be unable to attend this important hearing. In my absence, I have asked Garrey E. Carruthers, Assistant Secretary for Land and Water Resources, who oversees the coal program, to represent the Department at this hearing.

Your continued leadership on this important national issue is appreciated.

Sincerely,

JAMES G. WATT, *Secretary.*

Senator WARNER. Senator Metzenbaum.

**STATEMENT OF HON. HOWARD M. METZENBAUM, A U.S. SENATOR
FROM THE STATE OF OHIO**

Senator METZENBAUM. Mr. Chairman, I am indeed sorry that the Secretary's travel plans are more important than his appearing before this committee because I believe that the Secretary should be here.

My good friend from Wyoming talks about hyperbole, and then takes a defensive position vis-a-vis the GAO report. Let me point out that GAO has a certain kind of reputation around here. GAO is recognized by most of us in the Congress and, I think, by those who are familiar with it as being an apolitical, impartial, and objective organization. Therefore, when the GAO issues a report, as it did recently, it indeed raises questions that I think that only the Secretary can address.

Among these questions is whether the right amount of dollars were received for the Federal coal leases, whether certain potential bidders received proprietary information in advance, and whether their decision to lower the minimum acceptable bids stemmed from coal industry pressure.

It is not simply a question of who is right or wrong. The question has to do essentially with the integrity of governmental processes and the credibility of our Government. Mr. Watt makes numerous speeches about the free enterprise system, that it has to work, and that we have to get government out of business. Yet this ignores the real issue at hand which is the credibility of our Government and the integrity of our political processes. These issues have not been properly addressed. All that has been said is that the GAO is wrong.

Mr. Watt has a responsibility, not only to the people of this country which is certainly his highest responsibility, and not only to those of us who have oversight authority in the Congress. But Mr. Watt bears a special kind of responsibility, as Secretary of the Interior, to see to it that government, when it acts, acts properly, with ethics, and with the highest kind of standards. Without that, he fails the American people.

So I say, Mr. Chairman, that there are many questions to be asked, but the questions must deal with specifics. The real issue has to do with credibility and integrity. The American people cannot be expected to judge GAO, the Secretary of the Interior, or some Senator. However, they can judge what they think about their government, and it is a pretty accepted fact that they think damn little of their government. The handling of this matter, makes them think that much less of their government.

I am sorry that Mr. Watt is not here. I had looked forward to his responding because he is extremely able on the lecture circuit. He is very good in speaking to the congressional committees. But I am afraid that he has not responded well to inquiries about the processes that have been used by his department in the leasing our Federal coal reserve.

Thank you, Mr. Chairman.

Senator WARNER. Senator Hecht.

Senator HECHT. No statement, Mr. Chairman.

Senator WARNER. I would like to have placed in the record the statement of Senator Murkowski.

[The prepared statement of Senator Murkowski follows:]

Statement of
Senator Frank Murkowski
before the
Committee on Energy and Natural Resources
May 23, 1983

It's no secret that the United States is the "Persian Gulf of Coal". Our vast coal resources should be able to provide a significant portion of our energy needs well into the next century. Sadly, however, a number of factors have been keeping this tremendous resource from realizing its true supply potential. These factors include transportation bottlenecks, fluctuating demand, environmental concerns, and some of the Federal coal leasing policies of the past. In the face of these impediments to coal development, we have to ask ourselves what kind of coal leasing policy should be embraced in an effort to move more coal into production.

Because the Federal government controls in excess of 80% of western coal, our approach toward Federal coal leasing holds at least a few of the answers. We could adopt an approach aimed at maximizing our financial return from Federal coal properties. The Federal government could, by virtue of its extensive control over the resource, behave in a monopolistic fashion. But I think we can readily see the consequences of that approach. Higher lease acquisition costs would result in reduced leasing, reduced tax and royalty income, reduced employment, increased dependence on foreign fuels and higher consumer prices.

On the other hand, we could adopt an approach where ample supplies of coal could be leased, developed and utilized for the nation's benefit.

The Federal Coal Leasing Amendments of 1976 mandate that no Federal coal lease can be sold for less than its fair market value. In recent months the Department of the Interior has come under fire for offering coal in the Powder River lease sale at "bargain basement, fire sale prices". Now I will readily admit that I don't know what constitutes the "fair market value" for much of this coal. Nor do I believe that you can look at a figure of 6¢ or 8¢ or 10¢ per ton in bonus payments and conclude that the government received or did not receive fair market value. Indeed, there are a number of factors which must be considered. For instance, at what price should coal be offered where we can be sure that we will promote national economic efficiency in the development of the resource; provide for the timely development of the resource; promote competition in the coal industry; counter rising energy prices and inflation; provide for an equitable sharing of Federal coal value of production between the public and the producers; provide for socio-economic responsibility; and maximize national energy supply? A Federal coal leasing policy must balance all these goals. The maximization of bonus revenues at the expense of all other factors would be irresponsible and counterproductive.

Regardless of one's conception of fair market value and appropriate levels of bonus bidding, it is an indisputable fact that a lease in production will yield higher Federal revenues in the form of royalties and taxes than will a lease that is never produced. In one key indicator of success, the Department of Interior has made tremendous progress in bringing more Federal coal under lease. In the decade prior to 1981, the Department leased virtually no coal.

-3-

I, for one, would like to commend Secretary Watt for his ability to turn that situation around.

What we really have before us is simply a dispute in accounting methods and technical judgements. Some are using this dispute for their own political purposes. As the Washington Times pointed out last Friday, Jim Watt is "a man they love to hate...if he discovered the cure for cancer some folks would hit him for being pro life."

Senator WARNER. If there are no further statements by members of the committee, we will now proceed with a panel of witnesses led by J. Dexter Peach, Director of Resources, Community, and Economic Development Division of the General Accounting Office.

STATEMENT OF HON. J. DEXTER PEACH, DIRECTOR, RESOURCES, COMMUNITY AND ECONOMIC DEVELOPMENT DIVISION, GENERAL ACCOUNTING OFFICE, ACCOMPANIED BY LOWELL MININGER, GROUP DIRECTOR, NED SMITH, SENIOR EVALUATOR, AND EDWARD JOSEPH, SENIOR EVALUATOR, RESOURCES, COMMUNITY AND ECONOMIC DEVELOPMENT DIVISION, GENERAL ACCOUNTING OFFICE

Mr. PEACH. Thank you, Mr. Chairman.

First, I would like to briefly introduce my colleagues that are with me at the table today. I have on my right Mr. Lowell Mininger, who is the group director responsible for the review work that the GAO does with respect to Federal resource development programs in the Department of the Interior.

On my left, I have Mr. Ned Smith, immediately to my left, and Mr. Ed Joseph to his left. They were two of the principal analysts involved in our review of the Powder River coal sale.

I would like to ask that my entire statement today be made part of the record. And then I would like to try to move to summarize and highlight from that statement for the committee.

Senator WARNER. Without objection.

Mr. PEACH. Our report is entitled "Analysis of the Powder River Basin Federal Coal Lease Sale: Economic Valuation Improvements and Legislative Changes Needed," and was undertaken in response to a request from Congressman Ed Markey, who was later joined by Senator Max Baucus. We spent almost a year studying that very sensitive and controversial sale.

I would underline a point made by Senator Wallop in his opening statement. That the many issues surrounding the sale are technically complex, interrelated, and they simply cannot be examined in isolation.

We examined basically four issues: an alleged unauthorized disclosure by Interior of proprietary coal data prior to the sale; the change of bidding systems made about 6 weeks before the Powder River sale; whether Interior received fair market value for leased coal; and a question over whether the objectives of current leasing law are realistic in light of actual coal development patterns.

In evaluating these issues, we raise on one hand some serious questions regarding Interior's actions, and the reasoning behind them. On the other hand, we recognize that Interior faces a very difficult task of trying to sell competitively leases which are attractive only to adjacent mining operations, and of little interest to the rest of the industry.

Let me spend just a few minutes discussing our methodology in coming up with GAO's revised estimates of values for the Powder River coal tracts, an important part of our analysis. Basically we reviewed in detail, validated, and where we could, relied on the analysis used by Interior's regional economic evaluation team to es-

tablish its original estimates of minimum value, or so-called MAB's, for the coal tracts.

But where we found assumptions or adjustments that we judged inappropriate, basically involving three key issues, we made revisions to Interior's own calculations. This resulted in GAO's revised estimates of coal value.

I think that it is important to understand that rather than devising our own independent approach, we basically worked closely with the approach followed by Interior which we found generally reasonable under the circumstances, and made revisions to their analysis, or to certain assumptions or adjustments—and we believe that we can defend our revisions on the grounds that Interior's adjustments were not appropriate in the circumstances. We will talk about those a little more in a moment.

Briefly, on the first issue, the allegations that an unauthorized disclosure of proprietary coal data may have led to pressure on Interior from coal companies to change its bidding system, and lower its selling price for coal tracts to be offered at the April sale.

While we found evidence that such a disclosure may have occurred, we could not substantiate that it had any direct impact on preparations for or thus compromised the sale. Now we did find that the data in question had not been safeguarded in the manner required in department regulations, nor was the matter referred to the Department's Inspector General when allegations of improper disclosure were made.

We furnished the results of our review to the Inspector General, and understand that sometime last week, he completed his investigation, and issued a report which based on interviews with Interior's officials and coal industry persons concluded that no leak occurred.

In any event, because the alleged disclosure was not investigated before the sale, the controversy arose in May when the news media widely reported it, and rightly or wrongly the possible disclosure was linked in the public eye with the new bidding system instituted for the April sale.

Now the second issue that we looked into concerned that last minute change to entry level bidding for the April Powder River coal sale. At a March 19, 1982, meeting, senior Interior Department officials decided to change the bidding system to be used at the April sale.

The new system, called the entry level system, was patterned after the auction principle of starting the bidding at a floor or entry level price well below its real estimated value. Thus, instead of publishing and using the department's presale estimates of fair market value as minimum acceptable bids, its normal approach, lower entry level prices to start the bidding were published and later used at the sale.

Interior felt that the MAB's calculated by the Casper regional team were too high, based on faulty tract appraisal methods, and might scare away prospective bidders, whereas the entry level bids generally set at 40 or 50 percent of a tract's value were likely to spur bidding competition.

Now the decision to adopt entry level bidding had a dramatic impact on the lease prices that would have been published in Inte-

rior's notice of sale. At the time that Interior was planning to offer 19 leases at the April sale, entry level prices developed over the weekend of March 20 and 21 for the 19 leases totaled about \$70.6 million compared with the original MAB values of about \$144 million.

Thus, the impact at the time of the decision to adopt entry level bidding was to reduce the coal selling prices by over \$73 million. However, resource data errors for the Spring Draw and Fortin Draw tracts, which came to light after the March 9th decision, reduced the difference between the MAB's and the entry level bids to about \$47 million.

The subsequent elimination of 6 tracts from the sale, 5 due to the inability to gain surface owner consent, and the other because of a resource data error, further reduced the difference to \$24.6 million for the 13 tracts offered at the April sale.

If you would briefly turn to attachment 1 of my statement. Because it is easy to get confused with differences in values assigned and bids received, this chart shows down the left tab, the number of 1 tracts originally selected for the sale—

Senator JOHNSTON. What page is that?

Mr. PEACH. Attachment 1 to my statement, which would be page 13.

It shows down the lefthand tab, the tracts originally selected for the sale, the tracts actually offered for sale, tracts receiving bids, and the tracts for which bids were accepted. For each of those categories, as appropriate in the columns across, it shows the original MAB's, the corrected MAB's, taking into account resource data errors made by Interior in their original estimates for two tracts, the entry level prices established by Interior headquarters officials, GAO's revised values as we examined and validated Interior's model, and the actual bids received. I think that it is just a good chart to keep in mind, because you will find that a lot of different combinations of numbers can be thrown at you in discussing this sale, depending on which kinds and sets of figures you are looking at.

Senator BUMPERS. Mr. Chairman, if I could just interrupt so that I am clear on this.

The 12 tracts for which bids were accepted in April and October, did those include just two additional tracts?

Mr. PEACH. At a subsequent sale, a followup sale, in October.

Senator BUMPERS. Of 12 more tracts?

Mr. PEACH. And put up two more tracts

Senator BUMPERS. Two more tracts?

Mr. PEACH. Two more tracts.

Senator BUMPERS. OK. So that is those 2 tracts plus the 10 just above that?

Mr. PEACH. That is correct, sir.

Senator BUMPERS. All right, thank you.

Mr. PEACH. One was a tract that the bid was rejected on in the April sale, and they readvertised it again along with another tract. And then those two tracts were bid on and subsequently awarded.

Senator METZENBAUM. Would you also explain these corrected MAB's, because you say resource data. That is just two words to me.

What does that mean?

Mr. PEACH. There were errors made, such as they used the wrong stripping ratio. They later determined that the stripping ratio they used was inappropriate, and therefore the values set on the tracts should be different.

Senator BUMPERS. What is the stripping ratio?

Mr. PEACH. That is how much of the overburden that you have to strip off to get down to the coal. And that has to do with your cost of production.

Senator BUMPERS. Right.

Mr. PEACH. And in another case, it related to Btu values. And again, the Btu value of the coal has to do with how valuable it is. And there was an error in the Btu value that was used, later discovered, which led them to have to adjust those original MAB's.

Later, that becomes an important point, because it is one of the reasons why the MAB's now look to be very close to the estimated values to some degree, because there were adjustments made after the fact to take account of resource errors.

Senator METZENBAUM. Are these resource data adjustments made on the basis of subjective decisions, or are there objective decisions?

Mr. PEACH. No, I think that there were objective decisions. In other words, it is based on getting better data, reexamining the data that was used and making a judgment that no, this is the more appropriate information to be used. So the original numbers used were the errors, and then the revisions later to take account of the original errors that were made.

Now when we conducted our review, Interior headquarters officials had no records documenting, and could provide no written quantitative basis supporting the need to change the bidding system just 6 weeks prior to the sale.

We believe that this lack of analysis is particularly significant, since the system implemented was an experimental one, and the lease sale planned was the largest in history. The system did not spur bidding competition as Interior had envisioned.

In this regard, we would point out that many of the tracts were maintenance-type tracts which would largely be expected to be of interest only to the adjacent mining operations they border.

Now most of our report was directed at the question: Did the Powder River coal leases sell at fair market value? Our answer is that we believe that most of the Powder River leases sold at less than fair market value.

To reach that conclusion, we made numerous analyses of the economic evaluation methods employed by the Department's experts on the north-central regional economic evaluation team, criticism of the regional team's methods voiced at Interior headquarters, and procedures used after the sale to determine whether or not bids received represented fair market value.

Now in what economists call a perfect market, these analyses would not be necessary. Several companies, each with a relatively equal ability to develop a mine, would be bidding for each coal lease, and the resulting competition would unquestionably yield fair market value. No further analysis would be needed.

But today's coal market is far from perfect. Under current conditions, active bidding competition for Federal coal leases cannot reasonably be expected. Thus, to determine whether or not a coal lease sold for fair market value, the Government must resort to more sophisticated economic analysis. Both an estimate of the lease's value and a means for evaluating the bids received against that estimate are needed.

Now we found that the methods used by the regional evaluation team to estimate the value of Powder River leases, which resulted in the original MAB's, was not unreasonable under the circumstances. However, revisions to eliminate the effects—which turned out to be quite significant—of some unnecessary features of their analysis were needed.

On the other hand, we found Interior's headquarters officials' criticisms of the team's methods neither supportable nor warranted, since the officials could not provide us detailed information documenting weaknesses in the methods used; and based on our interviews, did not appear to know the details of the method itself.

Based on our analysis, we believe that Interior's contentions that the regional team's estimates of lease value were too high was not accurate. In fact, our analysis using the regional team's estimating approach and correcting for several inappropriate adjustments, showed that these estimates were far too low.

With closer attention to the regional team's lease valuation methods, Interior would have had a better understanding of the worth of the Powder River coal, and a better basis for determining fair market value after the sale.

Interior's postsale procedures for determining whether bids represented fair market value were conceptually flawed and improperly administered. While the procedures used after the April and October sales differ slightly, those suffer from the same conceptual illness, an overdependence on data from the actual sale itself.

Put simply, the procedures unrealistically anticipated genuine bidding competition. In addition, they were unclear and confusing in parts, and also included bid acceptance criteria which were unrelated to determining market value.

Our analysis indicated that the selling prices for leases sold in April and October were roughly \$100 million below our estimates of their value. Powder River tracts fall into two categories, new production and production maintenance tracts.

Of the five new production tracts, those that can be economically mined by themselves, only one was clearly acceptable based on our revised values. In our opinion, none of the seven maintenance tracts, those tracts designated to be a logical extension of an adjacent mining operation, sold at fair market value. All should have been rejected.

We have attached some charts which are attachment 2 to 5 in my testimony, which I would like to walk through briefly with you, because they illustrate the extent to which we believe that the Powder River tracts sold for less than our estimates of fair market value.

Senator BUMPERS. Mr. Chairman, if I could interrupt him.

Are you saying that 7 of the 12 tracts were maintenance tracts, and five were independently developable?

Mr. PEACH. That is correct, sir. Five could have been independently developed, and seven were adjacent to existing mining operations, and were designed really only to be attractive to that adjacent operator.

Senator BUMPERS. You are saying that none of those should have been accepted?

Mr. PEACH. We did not find them to be acceptable at this point. We have some suggestions on how you ought to approach these types of maintenance tracts in the future.

If I could ask you, an example, to turn to page 14, the attachment on that page. Briefly, what that shows at the top, is our revised value for the tracts of \$165.3 million. And it then compares that revised value to the adjusted MAB's after correcting for the resource data errors of \$70 million, the actual entry level bids that Interior headquarters officials developed of \$52.4 million, and the actual bids for the 10 tracts of the April sale accepted of \$43.5 million.

Senator WALLOP. That does reflect your changed assumptions; that is not based on the assumptions with which they proceeded, which were the ones that were developed in 1979.

Mr. PEACH. Both of those assumptions are down there. They have the adjusted MAB's.

Senator WALLOP. But I am asking you if your under value statement is based on your changed assumptions, but not the assumptions that were developed in the Carter administration in 1979?

Mr. PEACH. It is based on the assumptions as used by the regional and economic evaluation team. One of the things that we found in terms of referring to 1979, is that the north central region is the only area in the country, I believe, that is currently using that kind of method in the manner and way that they used it for this sale. It is something unique developed in that region for that sale.

The next attachment, or attachment 4—the attachment on page 15, basically just looks at the new production tracts. Senator Bumpers referred to this, just the new production tracts that were involved there; and for those tracts, it shows on an individual basis, what our value estimate for the tract was and what the actual bid is that was received.

Just to give you an idea on a percentage basis, the first tract—the Keeline tract—the actual bid represented about 7.5 percent of what we estimated fair market value would be, as we did our analysis.

The Rocky Butte tract was about 27.2 percent. Now, that Rocky Butte tract was the one where the bid was rejected the first time.

You will notice down at the bottom of the chart, it was readvertised again, at the second sale, in October, and they got a much higher bid, which came up to about 60 percent of what our estimate was.

Senator MELCHER. Do you have acreages for these? And tonnages?

Mr. PEACH. Yes, I do. I don't have those shown right here on this chart, but we do have that information.

Senator BUMPERS. Is that in your report?

Mr. PEACH. Yes, it is.

Senator MELCHER. How did you relate fair market value to the total acreage and total tonnage?

Mr. PEACH. I'm sorry—

Senator MELCHER. You are talking about fair market value of a bonus bid, I take it; are you not?

Mr. PEACH. Fair market value in terms of the bonus bid, which is the end product of the model that Interior uses.

In other words, they look at all revenues—

Senator Melcher. So, these are relatively small enough and miniscule enough to compare to the value of the coal.

How do you arrive at fair market value on a bonus bid?

Mr. PEACH. Well, again, we made revisions to the method that Interior used itself.

Senator MELCHER. You have a—

Mr. PEACH. In a discounted cash flow method, they come back to what they term as a bonus bid, which represents the value of that lease in the market.

Senator MELCHER. The greater value is the 12.5-percent royalty?

Mr. PEACH. Over time, assuming a lease is fully developed, and all the coal is produced, we would receive a royalty, which is a fixed amount, 12.5 percent, plus you would receive a rental off of that lease once you have let it.

Senator MELCHER. My point is that the 12.5-percent royalty is going to represent hundreds of millions of dollars, and we are talking about the first bonus bid that might be \$60 million—might be \$10 million.

Mr. PEACH. I would agree except that I would point out that the current legislation requires the receipt of fair market value, and fair market value relates very much to that special bonus bid; and that is the process that Interior has chosen to use the—

Senator MELCHER. Though it might only be less than 1 percent of the total.

Mr. PEACH. It could be less than 1 percent, although we have seen estimates that were indicating that for some of these tracts it could run up to 20 to 30 percent of the value.

Senator MELCHER. Where do you see that?

Mr. PEACH. Oh, well, we have seen some estimates based on the ones that were developed by the regional evaluation team that actually did this work for Interior, that ran up into that range.

Senator MELCHER. Are you talking about a tract of more than 1,000 acres which probably has 65,000 tons per acre as a minimum?

Mr. PEACH. A lot of it depends on when the coal is going to be developed and when you start discounting it back, because you are using also a discounted cash flow kind of method to develop these estimates.

Senator MELCHER. Well, you have a model that—

Senator WALLOP. Could I just point out to you, and I think that in fairness to the committee, you should point out that in your report with both the Rocky Butte and the Spring Draw you said acceptance of these bids was not clearly unreasonable.

Mr. PEACH. That is right, because we put them at the 48- and 60-percent level—

Senator WALLOP. Your chart is misleading, and your testimony tends to indicate that you drew another conclusion, and I think—

Mr. PEACH. Well, it may be——

Senator WALLOP [continuing]. In fairness to the committee, I think you should say what you have concluded.

Mr. PEACH. I think our testimony for the total record did say that. In summarizing, I did cut out those sentences which related down to individual tract levels.

Senator WALLOP. Thank you.

Senator JOHNSTON. Mr. Chairman, may I ask what the obligation of the bidder is? Specifically, I would like to know if you have to develop leased reserves according to a certain schedule? Also, do you have to put up a bond?

Mr. PEACH. Well, theoretically, you should be developing it within about a 10-year period.

OK, the bidder will have to pay rent once he has got the lease, of a certain minimum amount per acre, and then theoretically, the coal—the production should begin with the coal within about a 10-year period; and they should produce at least about 1 percent of the reserves.

Senator JOHNSTON. What I am driving at is whether a speculator can enter the bidding process and just bid without really being in the coal business, in the hope of getting these coal leases for less than fair market value?

Mr. PEACH. The potential exists because there is an assignment market in that area; although in most cases, these were large companies that were bidding for this coal in that area.

Very large companies are in the energy business. But there is such a thing as a coal assignment market, and there have been instances, some of which are referred to in our report, where even large companies have bought leases and then sold them subsequently on the assignment market to other companies.

Senator JOHNSTON. The lessee doesn't have an obligation then to begin developing the lease according to a certain schedule?

Mr. PEACH. Within 10 years, they would have to begin developing, and produce at least 1 percent of the reserves within 10 years, or else the lease would revert to the Government.

Senator JOHNSTON. That is specifically stated in the lease?

Mr. PEACH. That is correct; that is a requirement.

Senator JOHNSTON. 10 years to begin mining. In other words. They don't have to do anything at all for 10 years?

Mr. PEACH. That is right.

It gets—it even gets to be a little bit more complicated because there is some question if it is a maintenance tract, which is adjacent to a mining operation. There is a procedure by which the maintenance tract can be folded into the logical mining unit, which is adjacent in the production from the total unit; it can be considered as fulfilling that requirement of developing the lease.

So, the actual leased tract itself could not have the development started on it within that 10-year period but still meet that 10-year requirement, on the maintenance tracts.

Senator WALLOP. There is no doubt in most States and most areas of the country, under the Federal mining laws, that in a new tract, 10 years is just barely enough time to get their permit and everything underway in order to get that into mining.

Mr. PEACH. If you are talking about a new mining operation, that is right—in general, bottom line, 7 years is sort of like it is as quick as you might expect—7 to 10 is a rule of thumb of how long it takes you to get started, with a new mining operation.

The next chart basically just looks at the maintenance tracts. Those are the tracts located adjacent to mining operations, and while you can see how the bar graph works there, one thing I would point out that is worth emphasizing is that a number of tracts, starting with Colstrip A and B, down through the West Decker, were basically put into this sale at what they call a regulatory minimum, \$25 per acre; and it is sort of like the rock-bottom figure you would use for value of a tract—\$25 per acre.

So there is not any lower that they go in terms of placing the value on a tract in terms of that sale.

The last chart, attachment 5 on page 17, is worth spending a minute on, because it gets to the question of how we arrived at our adjusted value.

We have there two tract examples. By just taking the Little Rawhide tract, you have the original MAB value, the entry level price, the actual high bid, the GAO revised minimum acceptable bid, which was \$23.4 million, and the amount that we feel it undersold by, approximately \$16 million.

Now, to make that adjustment, we made basically three adjustments in each case. The first is what you would call production rate adjustment. Now, in making that production rate adjustment, Interior basically has to make a judgment as to what kind of mining operation is going to set up, how they are going to develop that coal, how they will produce it; and in reviewing that in some detail, we found that to be a very speculative kind of adjustment that required a number of assumptions to be made that were open to question.

We also found that it related very closely to another adjustment that was related to production that was being made, called the stripping ratio adjustment.

Now, again, how much overburden you have is an important part of how much it will cost you to produce, and we think it is appropriate to make an adjustment based on that amount of overburden and how that will affect production; and that is a production kind of adjustment that we see as important.

But it was our view that the production rate adjustment was so speculative that making no adjustment in this case was better.

The second area of adjustment concerns tax effects for small businesses. Basically, what you are doing there is adjusting downward for the effect of the tax breaks which a small business can't take advantage of, which a big business can take advantage of. So, it is an adjustment in favor of small business. We think that is an appropriate adjustment to make where you have a tract which you are setting aside for small business purposes, or where you have a tract that small businesses have actually expressed an interest in bidding on.

You see, it is appropriate for those circumstances, but we do not see it is appropriate to make for each and every tract. Most of these tracts are being developed by very large operations. We are talking about bidders like Amax, Shell, Texas Energy Services,

other firms like that; and so we think, make the small business tax adjustment where it is appropriate, where there is a small business set-aside tract, but not for each and every tract, because it is not appropriate in those circumstances.

Senator METZENBAUM. What is that tax benefit to which you referred?

Mr. PEACH. Well, without getting into more detail it can relate to a lot of things, but basically it is looking at, because of their scale and size of operations, various tax benefits which a large business would be in a better position to take advantage of, but which a small business would not; and it would be to the large business advantage. So, it is basically that type of adjustment. The last adjustment was called a 50-50 split adjustment; and basically, that adjustment is made for maintenance tracts that are attractive only to one bidder; and because Interior considered the tract attractive only to the one bidder, they would cut in half their original estimate, which would be made for the tract—a 50-50 split—saying there is not going to be real competition there; it is only attractive to one bidder so we don't think we can get as much for that tract.

Interior itself has since rejected that adjustment, although it was used for the April sale, and they will now no longer be making it for future sales.

So, briefly, those are the three adjustments that we eliminated in coming up with our revised estimates.

I will turn back to summarize—

Senator BUMPERS. But in reaching your revised version, you also used the 50-50 split, too, didn't you?

Mr. PEACH. Yes, we did.

In other words, we adjusted for that. We put 50 percent back into the value of several tracts. That is how we came up with some of the different numbers we did. We thought that was an appropriate revision.

Senator BUMPERS. As long as you are going to put maintenance tracts up for competitive bids, you feel that way?

Mr. PEACH. Yes. Yes.

Senator Bumpers. OK.

Mr. Peach. Now, as important as our specific findings on the Power River sale are, let me turn to another equally important finding, and that is that we found that Federal lease laws—the current Federal lease laws—are not completely realistic.

Under the Mineral Lands Leasing Act of 1920, the Secretary of Interior must award coal leases by competitive bidding, and he will accept no bid which he determines is less than fair market value.

The many laws influencing Federal coal management program, however, tend to restrict leasing to areas where coal is already being mined.

Western coal development patterns are well established going from years of noncompetitive leasing and speculation.

The current elaborate land use and lease planning processes tend to reinforce these patterns. As a result many of the leases offered at regional coal sales of the 13 Powder River leases offered in April are for the purpose of expanding existing mines. These are known as production maintenance leases, which for all intents and purposes are noncompetitive.

Under the present statutory framework Interior's task is difficult at best. The present law assumes all coal lease tracts are competitive. It does not recognize that essentially noncompetitive production maintenance tracts not only exist, but are in many cases desirable.

The captive nature of the six production maintenance tracts receiving bids at the April 1982 Powder River sale can be seen by comparing their expressions of interest against the actual numbers of bidders, basically a single bidder.

Now, continuing production maintenance tracts at regional coal sales only creates the pretense of competition, and offers little assurance that the Government will receive a reasonable return for its coal.

In our view this problem of maintenance leasing deserves some congressional attention.

I want to conclude by briefly summarizing our recommendations.

We recommend that Interior postpone scheduled regional coal sales until the Department has revised several features of its programs, including a detailed analysis of factors affecting the value of a Federal coal lease.

New internal procedures for conducting coal lease valuations; new guidelines for using untried or experimental bidding systems; minimum regulatory selling prices for coal leases in each Federal coal region on a cents-per-ton rather than a dollars-per-acre basis; revised fair market value determination procedures.

We also recommend the Secretary direct the Bureau of Land Management to establish Bureau-wide written internal procedures for safeguarding coal leasing pricing, economic valuation and other proprietary data.

While Interior prepares for future lease sales, Congress, too, should take steps to make the Department's task more practicable.

Legislative amendments are needed to authorize Interior to negotiate the essentially noncompetitive production maintenance leases and to provide appropriate controls over such negotiations.

Now, last, the issue of whether Interior attained fair market value for Powder River coal leases ultimately may be resolved in the courts.

The U.S. District Court for the District of Montana currently has the Powder River coal fair market value question before it. In the interim, we have urged Interior to reconsider the bids for those leases, in light of our findings, and if the evidence does not support a determination of fair market value, consider cancellation of the leases.

That concludes my summarization, Mr. Chairman, and I and my colleagues will be pleased to try to respond to you and the other members' questions.

[The prepared statement of Mr. Peach and report follow:]

UNITED STATES GENERAL ACCOUNTING OFFICE
WASHINGTON, D.C. 20548

For Release at 10:00 a.m.

May 23, 1983

STATEMENT OF
J. DEXTER PEACH, DIRECTOR
RESOURCES, COMMUNITY AND ECONOMIC
DEVELOPMENT DIVISION
BEFORE THE
SENATE COMMITTEE ON
ENERGY AND NATURAL RESOURCES

Mr. Chairman and Members of the Committee:

We appreciate the opportunity to be here today to discuss our recent report entitled "Analysis of the Powder River Basin Federal Coal Lease Sale: Economic Valuation Improvements and Legislative Changes Needed" (GAO/RCED-83-119). In response to Congressman Edward Markey's request--later joined by Senator Max Baucus--we have spent almost a year studying this very sensitive and controversial sale. The many issues surrounding the sale are technically complex, interrelated, and simply cannot be examined in isolation. The issues we have evaluated include:

- an alleged unauthorized disclosure by Interior of proprietary coal data prior to the sale;
- the change of bidding systems made about 6 weeks before the Powder River sale;
- whether Interior received fair market value for leased coal; and
- a question over whether the objectives of current coal leasing law are realistic in light of actual coal development patterns.

In evaluating these issues we raise--on the one hand--some serious questions regarding Interior actions and the reasoning behind them. On the other hand we recognize that Interior faces

the very difficult task of trying to sell--competitively--leases many of which are attractive only to adjacent mining operations and of little interest to the rest of the industry. For this reason our questions extend beyond the April and October Powder River coal sales to the Federal coal management program as well. In summary, our message is that several features of the Department's program need revision, but, to make Interior's task practicable, congressional action is also needed.

Our objective today is twofold. First, to outline our principal findings in each issue area. Second, to provide a perspective for viewing these findings and interpreting what they mean in the context of Federal coal leasing. Before walking you through each of the issues we evaluated, let me spend a few minutes discussing our methodology in coming up with GAO's revised estimates of values for the Powder River coal tracts--an important part of our analysis. Basically we reviewed in detail, validated, and--where we could--relied on the analysis used by Interior's regional economic evaluation team to establish its original estimates of minimum value (the so-called MABs) for the coal tracts. But where we found wrong assumptions or inappropriate adjustments, we made revisions to Interior's calculations. This resulted in GAO's revised estimates of coal value. It is important to understand, however, that rather than devising our own independent approach we worked closely with the approach followed by Interior--which we found generally reasonable under the circumstances--but making revisions to their analysis for assumptions or adjustments we found inappropriate.

EFFECT OF THE ALLEGED DISCLOSURE
OF PROPRIETARY COAL PRICE DATA
ON THE APRIL SALE

Concerning the first issue--allegations have been made that an unauthorized disclosure of proprietary coal data may have led to pressure on Interior from coal companies to change its bidding system and lower its selling price for coal tracts to be offered at the April sale. While we found evidence that such a disclosure may have occurred, we could not substantiate that it had any direct impact on preparations for--or thus compromised--the sale.

A memo dated March 26, 1982, from the North Central Regional Office of Interior's Minerals Management Service to Service headquarters asserted that the minimum acceptable bid (MAB) values for the April sale were distributed by unknown parties (not within the Service) and were in the hands of some industry, State, and private individuals. The memo also expressed a concern that the sale procedures may have been compromised. Interior has taken the position that since the memo is dated one week after the Department's March 19 decision to scrap the use of MABs in favor of a new bidding concept featuring entry level bids--the controversy surrounding the allegation is overemphasized. This position, however, does not account for the roughly 2-week period--beginning March 2--when the MABs were transmitted from the Casper regional office to the BLM Wyoming and Montana State offices until March 19 when the decision to change bidding systems was made. Thus, the possibility exists that during this time the MABs found their way into industry hands and that industry subsequently pressured Interior into changing bidding systems as a means of lowering coal selling prices.

Though internal Service and Bureau controls over the MABs were not in compliance with Departmental regulations (43 C.F.R. 2.20)--and numerous Service and Bureau field officials told us

that an unauthorized disclosure had occurred--we were not able to verify details relating to it or to establish a link between it and any "lobbying" by industry which might have resulted in the change in bidding systems. However, we found the allegations were not investigated within Interior. Under Departmental procedures--Department Manual, 355.2.1--the matter should have been referred to Interior's Inspector General after the March 26 memo was received. We furnished the results of our review to the Inspector General and understand that sometime last week he completed his investigation and issued a report which based on interviews with Interior officials and coal industry persons concluded that no leak occurred.

In any event, because the alleged disclosure was not investigated before the sale, controversy arose in May when the news media widely reported it. Rightly or wrongly, the possible disclosure was linked in the public eye with the new bidding system instituted for the April sale.

CHANGE TO ENTRY LEVEL BIDDING

At a March 19, 1982, meeting, senior Interior Department officials decided to change the bidding system to be used at the April sale. The new system--called the entry level system--was patterned after the auction principle of starting the bidding at a "floor" or entry level price well below its real estimated value. Thus, instead of publishing and using the Department's presale estimates of fair market value as minimum acceptable bids (MABs)--its normal approach--lower "entry" level prices, to start the bidding, were published and later used at the sale. Interior felt that the MABs calculated by the Casper regional team were too high, based on faulty tract appraisal methods, and might scare away prospective bidders--whereas the entry level bids, generally set at 40 to 50 percent of a tract's value, were likely to spur bidding competition.

The decision to adopt entry level bidding had a dramatic impact on the lease prices which would have been published in Interior's Notice of Sale. At the time Interior was planning to offer 19 leases at the April sale. Entry level prices, developed over the weekend of March 20-21 for the 19 leases, totaled about \$70.6 million, compared with their original MAB values of about \$144 million. Thus, the impact at the time of the decision to adopt entry level bidding was to reduce the coal selling prices by over \$73 million. However, resource data errors for the Spring Draw and Fortin Draw tracts--which came to light after the March 19 decision--reduced the difference between MABs and entry level bids to about \$47 million. The subsequent elimination of six tracts from the sale--five due to an inability to gain surface owner consent, the other because of a resource data error--further reduced the difference to \$24.6 million for the 13 tracts offered at the April sale.

Because it is easy to get confused with differences in values assigned and bids received among the number of (1) tracts originally selected for sale, (2) tracts actually offered for sale, (3) tracts receiving bids, and (4) tracts for which bids were accepted, we have developed a chart (Attachment I) showing for each category, as appropriate, the original MABs, the corrected MABs taking into account resource data errors on two tracts, the entry level prices established by Interior, GAO's revised values, and the actual bids received.

When we conducted our review, Interior headquarters officials had no records documenting and could provide no written quantitative basis supporting the need to change the bidding system, just six weeks prior to the sale. We believe this lack of analysis is particularly significant since the system implemented was an experimental one, and the lease sale planned was

the largest in history. The system did not spur bidding competition as Interior had envisioned. In this regard, we cannot visualize any rationale for believing that values for production maintenance-type tracts would be "bid up" since such tracts are only of interest to the adjacent mining operations they border. Instead of doubling entry level prices as anticipated, actual bids, for the 11 tracts bid on, exceeded entry levels by only \$2.2 million, falling \$15 million short of Interior's original estimates of their value--as corrected--of \$70 million.

DID POWDER RIVER COAL LEASES
SELL AT FAIR MARKET VALUE?

Most of our report is directed at answering this basic question. Based on our evaluation, we believe that most Powder River leases sold for less than fair market value. Before reaching that conclusion, however, we made numerous analyses of the

- economic valuation methods employed by the Department's experts on the North Central Regional Economic Evaluation Team,
- criticisms of the regional team's methods voiced at Interior headquarters, and
- procedures for determining--after the sale--whether or not bids received represented fair market value.

In what economists call a "perfect market," these analyses would not be necessary. Several companies--each with relatively equal ability to develop a mine--would be bidding for each coal lease and the resulting competition would unquestionably yield fair market value. No further analysis would be needed. But, today's coal market is far from perfect. Under current conditions, active bidding competition for Federal coal leases cannot reasonably be expected. Thus, to determine whether or not a

coal lease sold for fair market value, the Government must resort to more sophisticated economic analyses. Both an estimate of the lease's value and a means for evaluating bids received against that estimate are needed.

We found that the method used by the regional evaluation team to estimate the value of Powder River leases--which resulted in the original MABs--was not unreasonable under the circumstances. However, revisions to eliminate the effects--which turned out to be quite significant--of some unnecessary features of their analysis were needed. On the other hand, we found Interior headquarters officials' criticisms of the team's methods neither supportable nor warranted since the officials could not provide us detailed information documenting weaknesses in the methods used and based on our interviews did not appear to know details of the method itself.

Based on our analysis, we believe Interior's contention that the regional team's estimates of lease value were too high was not accurate. In fact, our analysis, using the regional team's estimating approach and correcting for several inappropriate adjustments, showed these estimates were too low. With closer attention to the regional team's lease valuation methods, Interior would have had a better understanding of the worth of Powder River coal and a better basis for determining fair market value after the sale. In addition, had the Department more closely analyzed its own criticisms of the regional team's methods, Interior may not have changed to the experimental entry level bid system but instead made appropriate adjustments to the regional team's original estimate of fair market value.

Interior's postsale procedures for determining whether bids represented market value were conceptually flawed and improperly administered. Though the procedures used after the April and

October sales differ slightly, both suffer from the same conceptual illness--an overdependence on data from the actual sale itself. Put simply, the procedures unrealistically anticipated genuine bidding competition. In addition, they were unclear and confusing in parts and also included bid acceptance criteria which were unrelated to determining market value.

From our analysis we found that most Powder River coal leases sold for less than fair market value. In fact, actual selling prices for leases sold in April and October were roughly \$100 million below our estimates of their value. Powder River tracts fall into two categories--new production and production maintenance tracts. Of the five new production tracts--those that can be economically mined by themselves--only one was clearly acceptable based on our revised values. Two sold for less than 30 percent of our revised value and thus in our opinion were clearly unacceptable, while the two remaining tracts sold at 48 and 60 percent of our revised value and thus while not clearly unacceptable--considering changes in demand for new coal production--were at least questionable. In our opinion, none of the seven maintenance tracts--those tracts designated to be a logical extension of an adjacent mining operation--sold at fair market value. All should have been rejected. We have attached some charts, which I will walk you through, which illustrate the extent to which Powder River tracts sold for less than our estimates of their fair market value.

FEDERAL LEASE LAWS
ARE NOT REALISTIC

Under the Mineral Lands Leasing Act of 1920, as amended by the Federal Coal Leasing Amendments Act of 1976 [30 U.S.C. 201 (a)(1)], the Secretary of the Interior must award coal leases by competitive bidding, but shall accept no bid which he determines

is less than fair market value. The many laws influencing the Federal Coal Management Program, however, tend to restrict leasing to areas where coal is already being mined. The Western coal industry has learned to live with this approach and is expanding existing mines rather than opening new ones. Since coal production lags about 10 years behind the date a company obtains a coal supply contract, expanding existing mines can provide a company with coal needed to either satisfy contract commitments, negotiate longer-term contracts, or compete for new contracts. Many experts think this development pattern results in more efficient and economic mining operations. Environmentalists seem to prefer this approach to other approaches for developing western coal because the impact of mining is restricted to a particular area. States generally agree with it because socioeconomic impacts are similarly limited.

Western coal development patterns are today well established--growing from years of noncompetitive leasing and speculation. The current elaborate land use and lease planning processes tend to reinforce these patterns. As a result, many leases offered at regional coal sales--8 of 13 Powder River leases offered in April--are for the purpose of expanding existing mines. These are known as production maintenance leases, which for all intents and purposes, are noncompetitive.

Under the present statutory framework, Interior's task is difficult at best. The present law assumes all coal lease tracts are competitive. It does not recognize that essentially noncompetitive production maintenance tracts not only exist but are in many cases desirable. Thus, present law does not allow Interior to value and sell coal leases in a manner consistent with actual coal development patterns. As a result, the manner in which the Government leases coal does not correspond to the way industry is developing the resource.

Since tracts are offered for sale based on expressions of interest, companies need only ask Interior to offer a specific property and the Department usually obliges. Conducting a "competitive lease sale" under these circumstances offers little assurance that the Government will receive a reasonable return for leased coal. The captive nature of the six production maintenance leases receiving bids at the April 1982 Powder River sale can be seen by comparing their expressions of interest against the actual number of bidders. All of the six tracts were offered based on a single expression of interest and received only one bid--except for West Decker which received two bids (the second bidder did not appear to be a "sincere" one--since only the first bidder could mine the coal). Continuing to sell production maintenance tracts at regional coal sales only creates the pretense of competition and offers little assurance that the Government will receive a reasonable return for its coal. In our view this problem of "maintenance leasing" deserves Congressional attention.

CONCLUSIONS AND RECOMMENDATIONS

Mr. Chairman, I have covered several sensitive and controversial issues surrounding the Powder River Basin Coal Sale and before moving into our recommendations I would like to recap our key findings which raise serious questions about the manner in which Interior conducted the sale.

- While we found limited evidence that a disclosure of proprietary coal data may have occurred, we were unable to verify related details or to confirm that it had an impact on preparations for the April sale.
- The disclosure allegations were not investigated within Interior or promptly referred to Interior's Inspector General as required under Departmental procedures.

- Interior had no records documenting and could provide no written quantitative basis supporting the need to change the bidding system for the April sale. The "entry level" system used did not work as Interior envisioned. The October followup sale, while featuring yet a different approach, offered little indication of the worth of Interior's "minimum" bidding concept, since only two tracts were offered.
- Based on our evaluation, most Powder River coal leases sold for less than fair market value. Actual selling prices for leases sold in April and October were roughly \$100 million below our estimates of their value.

Our report recommends that Congress and the Secretary of the Interior take several actions to ensure a reasonable return to the Government for leased coal.

We specifically recommend that Interior postpone scheduled regional coal sales until the Department has revised several features of its program. Briefly stated we recommend that Interior develop

- a detailed analysis of factors affecting the value of a Federal coal lease;
- new internal procedures for conducting coal lease valuations;
- new guidelines for using untried or experimental bidding systems;
- minimum regulatory selling prices for coal leases in each Federal coal region on a cents per ton, rather than dollars per acre, basis;
- revised fair market value determination procedures.

We also recommend that the Secretary direct the Bureau of Land Management to establish Bureau-wide, written internal procedures for safeguarding coal lease pricing, economic valuation, and other proprietary data.

While Interior prepares for future lease sales, Congress, too, should take steps to make the Department's task more practicable. Legislative amendments are needed to authorize Interior to negotiate the essentially noncompetitive production maintenance leases. In addition, to ensure public and industry awareness of the lease negotiation process, and to provide ample opportunity for affected parties to influence the process, the amending legislation should require that Interior publish its (1) intent to negotiate a proposed maintenance lease, (2) decision to negotiate the lease as proposed and its evaluation of public comments, (3) intent to sell the lease and the proposed sale terms, and (4) decision to sell the lease as proposed, or under modified terms, and its evaluation of public comments. Further, to facilitate future evaluations of the negotiation process, we recommend that the amending legislation require that detailed records be kept of the negotiations, including evidence presented by Government and industry representatives, and of its disposition.

The issue of whether Interior obtained fair market value for Powder River coal leases ultimately may be resolved in the courts. The U.S. District Court for the District of Montana currently has the Powder River coal fair market value question before it. In the interim, we urge Interior to reconsider the bids for these leases--in light of our findings--and if the evidence does not support a determination of fair market value, the Department should cancel the leases. This action would be consistent with the view of the United States Supreme Court that in a proper case the Secretary of the Interior has the power to correct his own errors, by lease cancellation (Boesche v. Udall, 373 U.S. 472 (1963)).

Mr. Chairman that concludes my statement; I welcome any questions the committee may have.

ATTACHMENT I

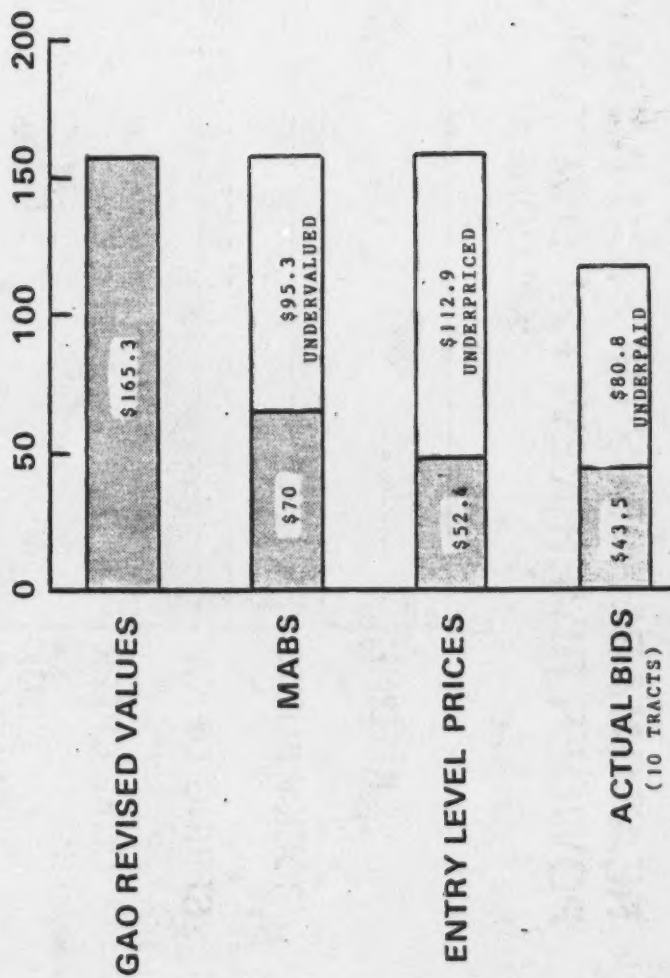
Comparison of Actual Bids
with Estimates of Tract Value

	<u>Original</u> <u>MABs</u>	<u>"Corrected"</u> <u>MABs*</u>	<u>Entry</u> <u>level</u> <u>prices</u>	<u>GAO</u> <u>revised</u> <u>value</u>	<u>Actual</u> <u>bids</u>
	<u>\$ Millions</u>				
19 tracts originally selected (Feb.'82)	\$144	\$117.4	\$70.6	-	-
13 tracts offered, (Aor.'82)	107.9	83.2	58.5	-	-
11 tracts bid on, (Apr.'82)	94.7	69.95	52.4	165.3	54.7
10 tracts for which bids accepted, (May'82)	68.1	43.4	41.27	124.3	43.5
12 tracts for which bids accepted, (Apr. and Oct.'82)	97.2	70.7	54.6	167.8	67.2

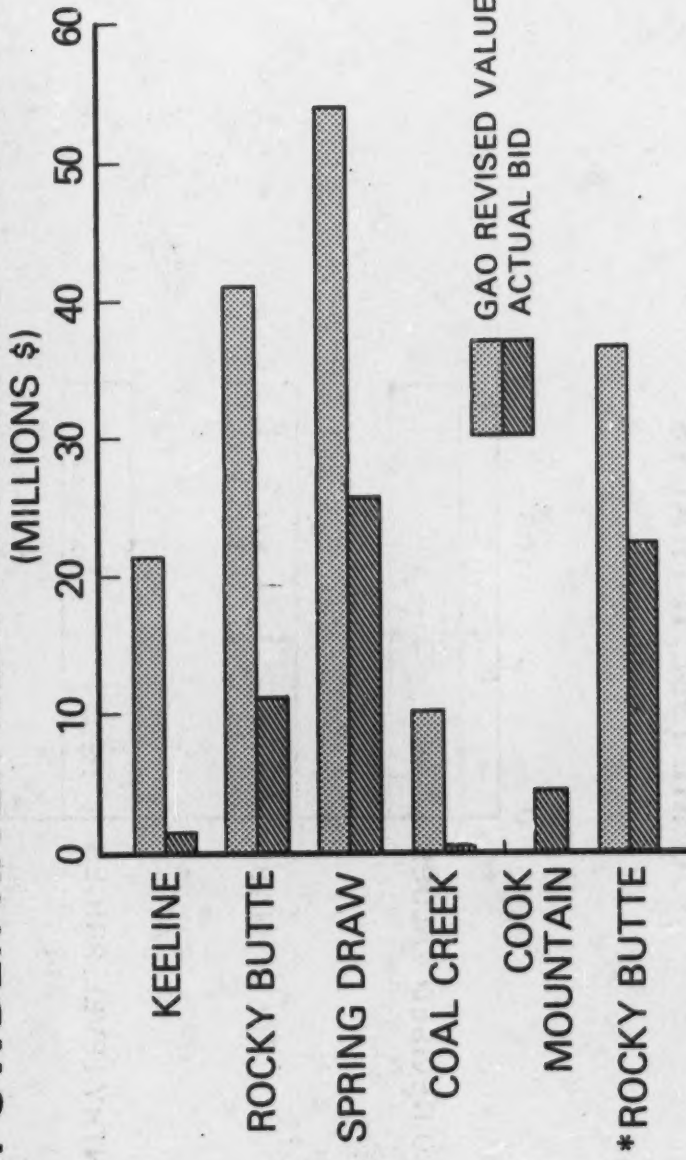
*MABs corrected to account for data errors related to Spring Draw and Fortin Draw tracts. Error on Fortin Draw discovered Apr.'82; tract dropped from sale, reoffered Oct.'82. Partial error on Spring Draw discovered May'82, in time for postsale analysis—full error discovered Aug.'82.

**COMPARISON OF GAO'S REVISED VALUES
TO MABS, ENTRY BIDS, ACTUAL BIDS,
APRIL 1982, 11 TRACTS**

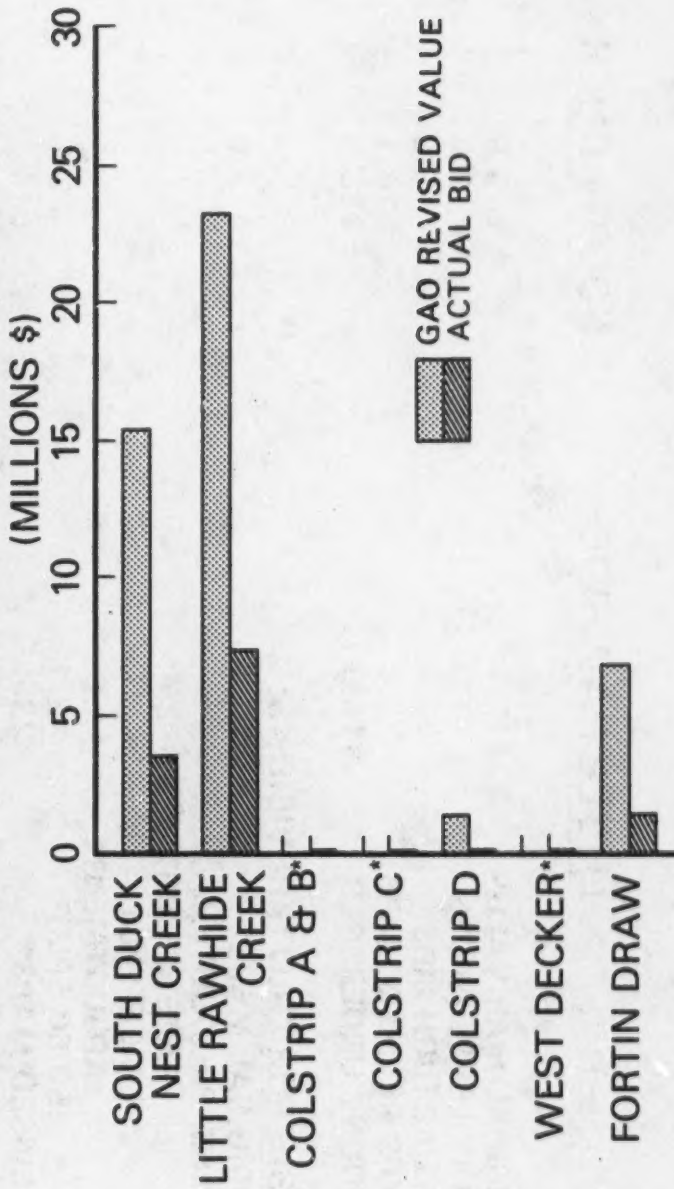
(Millions)



REASONABLENESS OF BIDS ANALYSIS FOR POWDER RIVER NEW PRODUCTION TRACTS



REASONABLENESS OF BIDS ANALYSIS FOR POWDER RIVER MAINTENANCE TRACTS



16

*GAO's revisions to Interior's analysis still resulted in negative values. Actual bids amounted to less than .2¢ per ton.

FOR EXAMPLE . . . LITTLE RAWHIDE AND SOUTH DUCK NEST TRACTS

LITTLE RAWHIDE SOUTH DUCK

(MILLIONS)

ORIGINAL MAB VALUE	\$12.1	\$ 3.6
ENTRY LEVEL PRICES	7.2	3.6
ACTUAL HIGH BIDS	7.4	3.6
GAO'S REVISED MABS	23.4	14.1
AMOUNT UNDERSOLD	\$16.0	\$10.5

BASIS FOR GAO'S REVISIONS:

ORIGINAL MABS	\$12.1	\$ 3.6
LESS: PRODUCTION		
RATE ADJUSTMENT - 2.4		
TAX EFFECT		+3.0
ADJUSTMENT	+1.6	+3.9
50/50 SPLIT	+12.1	+3.6
REVISED MABS	\$23.4	<u>\$14.1</u>

BY THE COMPTROLLER GENERAL

Report To The Congress

OF THE UNITED STATES

Analysis Of The Powder River Basin Federal Coal Lease Sale: Economic Valuation Improvements And Legislative Changes Needed

At sales in April and October 1982, the Department of the Interior sold Powder River Basin coal leases in Wyoming and Montana for \$67 million. Although these prices were only \$3.5 million less than Interior's original estimates of their value, they were roughly \$100 million less than GAO's revised estimates of fair market value. GAO made these revisions using Interior's estimating approach and correcting for several inappropriate adjustments.

The Secretary of the Interior may wish to reconsider Departmental determinations and cancel leases for which fair market value was not received. GAO recommends that the Secretary postpone scheduled regional coal sales until the Department strengthens its procedures for determining the fair market value of Federal coal.

Prevailing statutes assume all leases are competitive and do not recognize that much of the coal is essentially captive to existing producers. In trying to sell such leases competitively, the Government realizes a less-than-reasonable return for Federal coal. To remedy this situation, GAO recommends that the Congress amend the Mineral Lands Leasing Act of 1920 to authorize Interior to negotiate the sale of leases in appropriate cases.



GAO/RCED-83-119

MAY 11, 1983



COMPTROLLER GENERAL OF THE UNITED STATES
WASHINGTON D.C. 20548

B-208410

To the President of the Senate and the
Speaker of the House of Representatives

Overseeing the management of our Nation's wealth of natural resources--including huge western coal deposits--is a high priority concern to the Congress. This report evaluates many sensitive and controversial issues surrounding the April 28, 1982, sale of coal leases in the Powder River Basin Federal Coal Region and its implications for the overall success of the Federal Coal Management Program. It was requested by Edward Markey, Chairman, Subcommittee on Oversight and Investigations, House Committee on Interior and Insular Affairs, and Senator Max Baucus.

We did not obtain written Department of Interior comments on a draft of our report. However, Interior officials were briefed on the issues covered in the report and their views have been included as appropriate.

Copies of the report are being sent to the Director, Office of Management and Budget, and to the Secretary of the Interior.

Charles A. Bowles
Comptroller General
of the United States

COMPTROLLER GENERAL'S
REPORT TO THE CONGRESS

ANALYSIS OF THE POWDER
RIVER BASIN FEDERAL COAL
LEASE SALE: ECONOMIC
VALUATION IMPROVEMENTS AND
LEGISLATIVE CHANGES NEEDED

D I G E S T

On April 28, 1982, the Department of the Interior held the largest Federal coal lease sale in America's history. It offered 13 coal tracts for competitive leasing, about 1.6 billion tons of coal reserves in the Powder River Basin of Wyoming and Montana--receiving bids for 11 tracts totaling \$54.7 million, but accepting bids for only 10 tracts totaling \$43.5 million. The \$11.2 million bid for the Rocky Butte tract was rejected because it was less than fair market value. Although the Department considered the sale a success, both its preparations and outcome have been seriously questioned by Members of Congress, industry, environmentalists, and the media. Two lawsuits have been filed--and are pending--challenging the legality of the sale.

In May 1982, Chairman Edward J. Markey, Subcommittee on Oversight and Investigations, House Committee on Interior and Insular Affairs, asked GAO to review the sale to (1) check for violations of law or standards of conduct stemming from allegations of an unauthorized disclosure of proprietary coal data by Interior employees, (2) examine the basis for a last-minute Departmental decision to change the bidding system for selling the leases, and (3) determine whether or not the public received fair market value for its coal.

In June 1982, Senator Max Baucus joined Chairman Markey as a co-requestor. They later expanded their request to include detailed evaluations of (1) the lease valuation methods used by Interior's economic evaluation team, (2) new Interior coal leasing regulations published on July 30, 1982, and (3) an October 15, 1982, followup Powder River coal sale at which two leases, including the one on which a bid was rejected at the April sale, were sold for \$23.7 million.

INTERIOR'S ALLEGED DISCLOSURE
OF ITS PROPRIETARY COAL PRICE DATA

In May 1982, just after the sale, coal trade publications and major newspapers reported allegations of an unauthorized disclosure--by unknown parties within the Department of the Interior--of proprietary coal lease valuation data. The alleged disclosure reportedly occurred before the sale. The published articles linked the disclosure to (1) possible attempts by coal companies to pressure Interior into lowering its estimates of the value of the coal leases and (2) an eleventh hour change of bidding systems, resulting in a more than \$46 million reduction in Interior estimates of lease values for the 19 tracts originally planned for inclusion in the sale. (For the 11 tracts for which bids were actually received at the sale, the reduction was about \$17.5 million.)

GAO found a March 26, 1982, Interior internal memo asserting the possibility that such a disclosure occurred and evidence that proprietary data was not properly safeguarded by Interior field offices. In addition, Interior did not investigate the possible improper handling of the data and its potential impact on the forthcoming sale. As a result, sale controversy arose when the alleged disclosure was publicized.

GAO was unable to verify details related to the alleged disclosure or to confirm that it had an impact on preparations for the April sale. (See ch. 2.)

INTERIOR'S BASIS FOR CHANGING
LEASE SALE BIDDING SYSTEMS

In 1982, Interior made two major changes in its coal lease sale bidding systems, both consistent with the Department's desire to lease in a manner permitting fair market value to be determined after, rather than before, a sale. For the April Powder River sale, the change to an experimental "entry level" bidding system required participants to submit sealed bids. Bidding generally began at levels set well below the estimated value of individual tracts. When two or more sealed bids were received for an

individual tract, oral bidding followed and the highest bidder was awarded the lease. This process replaced the previous system of publishing presale estimates of coal value, or "minimum acceptable bids." The change to the entry level bidding system was prompted by Departmental concerns over a possible reluctance by industry to bid if Interior set minimum acceptable bid values as under the previous system. Interior believed these values would have been too high--under existing market conditions--to encourage the level of industry participation desired.

The October followup sale featured yet a different approach whereby a participating coal company would be allowed only one bid. Referred to as sealed "minimum" bidding, this system was based on another premise--that coal companies, if allowed only a single sealed bid, would offer their highest bid to gain the lease.

For the April sale, Interior had no records documenting, and could provide no written quantitative basis supporting the need to change the system, just 6 weeks prior to the sale. In addition, GAO found that the entry level system used did not work as envisioned. Bidder participation was minimal--8 of the 11 tracts bid on received only one bid, the other 3 tracts each 2 bids. Moreover, the value of tracts was not "bid up" as expected. Bids for the 11 tracts exceeded the entry level bid minimum by only \$2 million, falling \$15 million short of Interior's original estimated value of \$70 million.

In addition, the October followup sale offered little indication of the worth of Interior's "minimum" bidding concept, since only two tracts were offered and each attracted, as expected, only one bidder. As with entry level bidding, minimum bidding theory requires an active bidding interest in tracts to ensure honest "best" bids.

Notwithstanding the problems associated with the change to the entry level bidding system, accepted bids at the April and October sales, combined, totaled \$67.2 million for 12 tracts, compared to Interior's original minimum acceptable bid estimates of \$70.7 million. (See ch. 3.)

INTERIOR CRITICISMS OF THE
COAL LEASE VALUATION METHODS
OF THE REGIONAL ECONOMIC
EVALUATION TEAM

As noted above, Interior changed its bidding system for the April sale, scrapping the original estimates of lease value calculated by the Department's regional economic evaluation team, on the basis these estimates were too high. Interior officials told GAO they believed deficiencies in the valuation methodology employed by the team were the cause of the high values. GAO found, however, that the criticisms of Interior officials were not based on analysis or otherwise justified.

Estimating the value of a Federal coal lease is at best a difficult process. Substantial amounts of comparative sales data are normally required before sound estimates can be developed. The most reliable data come from past competitive Federal coal sales in the same region, but data from State or private sales can also provide good indicators of lease value. In addition, recent arm's length transactions between unaffiliated parties in the private assignment market where Federal, State and private leases change hands are also reliable data sources.

In this case, data from competitive Federal sales in the Powder River Region were lacking because of a Federal coal leasing moratorium dating from 1971. In addition, no data on State leases could be obtained, although the regional team did obtain data on a Federal lease tract sold in the assignment market in July 1980. But more data were needed.

Without sufficient sales data, Interior's regional economic evaluation team resorted to modeling a hypothetical Powder River mining operation, simulating the effect differences in physical mine characteristics and coal quality would have on lease values, thus simulating sales data. Differences in coal heat values (Btu ratings), sulfur content, reclamation and surface purchase costs, stripping ratios, production rates, small business tax effects, etc., were simulated. The team then developed equations describing how differences in the various

characteristics would affect lease value. These equations were used to compare the Powder River Basin lease sold privately in 1980 to the Federal leases being offered in 1982.

GAO believes the approach used by the evaluation team, although imperfect and in need of some adjustment, was reasonable under the circumstances and provided a technically sound basis for estimating the fair market value of Powder River tracts. GAO revised the evaluation team's calculations to eliminate the effect of inappropriate factors--designed to reflect economies of scale associated with different-size mining operations, small business tax effects--and an improper policy of reducing the value for certain small tracts.

GAO revised the calculations because the evaluation team (1) could not demonstrate that an adjustment to reflect varying economies of scale was needed, (2) agreed that the small business tax effect adjustment should not have been made except in one case involving a small business set-aside tract, and (3) agreed that its policy of reducing the value of certain small tracts was inappropriate. Interior subsequently discarded this policy. Interior officials themselves had earlier identified the first two adjustments as speculative, thinking they were the reason why the regional team's original lease value estimates were so high. GAO found, however, that instead of making the estimates too high, the inappropriate adjustments and the other reduction made the estimates too low--undervaluing the 11 tracts in the April sale by \$95 million.

INTERIOR'S DETERMINATION OF FAIR MARKET VALUE

In addition to the presale weaknesses discussed above, GAO found weaknesses in the fair market value determination procedures used after the April sale and similar weaknesses in the procedures used after the October sale. Both sets of procedures were unclear and overly dependent on data derived from the sale itself, which--absent competition--is not an appropriate measure of fair market value.

Under the Mineral Lands Leasing Act of 1920, as amended by the Federal Coal Leasing Amendments Act of 1976 [30 U.S.C. 201(a)(1)], the Secretary

of the Interior must award coal leases by competitive bidding (except incident to certain right-of-way permits under a 1978 amendment) and cannot accept any bid which he determines to be less than fair market value. He has substantial discretion in this matter because determining lease value is inherently imprecise.

The "fair" element of the term "fair market value" applies to the method for determining market value. In the case of coal leases, it need only reflect the tract's value at the time and place of the sale--fairly determined. Thus, the method utilized by the Secretary of the Interior to determine the market value of the lease must be suitable for this purpose--and reasonably assure fair market value was obtained.

GAO, however, found substantial weaknesses in Interior's method (procedures) for determining market value. Interior's method relied heavily on using data from the sale itself--anticipating genuine competition. Conceptually this approach might have worked if enough tracts had brought competition. Unfortunately, this was not the case. Of the 11 tracts receiving bids in April, 8 received only 1 bid each, and the other 3 only 2 bids.

Absent genuine competition, Interior's procedures offered little assurance that fair market value was attained. GAO therefore used the regional economic evaluation team's estimates of tract value--revised to eliminate the effect of the two inappropriate adjustments and the other reduction discussed above--as a yardstick for measuring whether or not the bids should have been accepted as fair market value. Comparing bids offered at the two sales against these revised estimates, GAO found that only 1 of 13 bids for the two sales was clearly acceptable, while two others--though questionable--may have been acceptable under the circumstances. In summary, Powder River coal sold at roughly \$100 million less than GAO's revised estimates of fair market value at the April and October sales. (See ch. 5.)

NEED FOR LEGISLATIVE CHANGE

GAO believes many of Interior's problems stem from the leasing dilemma it faces rather than

from its administrative practices. The manner in which the Government leases coal does not always match the way industry develops the resource. The Government attempts to sell every lease by competitive bidding, even when it knows that much of the coal is situated in areas that can only be mined by one company. Production maintenance leases, for example, are designed to sustain operations at ongoing mines and are not intended to be part of a new mining operation.

For all intents and purposes production maintenance leases are noncompetitive, but because prevailing statutes require competitive lease sales and receipt of fair market value, Interior cannot legally recognize the role these leases play in actual coal development patterns. As a result such leases are underpriced in competitive sales because they are worth little to companies other than the one whose mining operation they are designed to sustain. Not surprisingly they generally do not attract competition--usually receiving only one bid. More importantly, however, unless priced and/or sold differently, it is unlikely that the bids for these leases will represent fair market value which could be otherwise obtained, or a reasonable return. (See ch. 6.)

Of the 11 tracts receiving bids at the April sale, 6 were maintenance tracts. In addition, one of the two tracts sold at the October sale was a maintenance tract. Of these seven maintenance tracts, six attracted one bidder, and one attracted two bidders. Based on an analysis of the bids for these tracts against GAO's estimates of their value, none of the tracts sold at fair market value.

RECOMMENDATIONS TO THE CONGRESS

To remedy conflicts between the manner in which the Government leases and industry develops Federal coal, GAO recommends that the Congress amend the Mineral Lands Leasing Act of 1920, as amended by the Federal Coal Leasing Amendments Act of 1976, to authorize Interior to negotiate noncompetitive--maintenance--leases as a means of assuring a reasonable return to the Government for leased coal. Appropriate controls over the negotiation process are also being recommended to assure protection of public and industry interests.

RECOMMENDATIONS TO THE
SECRETARY OF THE INTERIOR

GAO believes that Interior received less than fair market value for the Powder River leases sold. The issue of whether Interior obtained fair market value for Powder River coal leases ultimately may be resolved in the courts as a result of lawsuits challenging the sale's legality. During the interim, however, the Secretary of the Interior may wish to reconsider the Departmental methods and determinations--in light of GAO's findings--and cancel those leases for which fair market value was not obtained.

To ensure that fair market value is received for competitively sold leases and--if authorized--a reasonable return is negotiated for noncompetitive leases, GAO recommends that the Secretary not resume coal leasing until Interior corrects deficiencies in its valuation, leasing, and fair market value determination procedures. The Secretary should direct the Bureau of Land Management to establish Bureau-wide procedures for safeguarding proprietary information, including lease valuation data.

No agency comments were obtained on this report. However, the technical results of our evaluation were discussed in detail with senior Department of the Interior officials.

C o n t e n t s

		<u>Page</u>
DIGEST		i
CHAPTER		
1	INTRODUCTION	1
	Background	1
	Controversy related to sale	3
	Objectives, scope, and methodology	5
2	ALLEGATIONS THAT A DISCLOSURE OF PROPRIETARY DATA COMPROMISED THE APRIL SALE COULD NOT BE SUBSTANTIATED	8
	Minimum acceptable bids not safeguarded prior to April sale	8
	Circumstances relating to the alleged disclosure difficult to document	10
	Disclosure not investigated before sale	11
3	CHANGE TO ENTRY LEVEL BIDDING UNTIMELY AND INEFFECTIVE	13
	Bidding systems used in Federal Coal Management Program prior to March 1982	14
	Major changes in bidding systems implemented in only 6 weeks	17
	Minimum bidding used at October 1982 followup sale	23
4	INTERIOR'S CRITICISMS OF COMPARABLE SALES ANALYSIS UNWARRANTED, BUT IMPROVEMENTS ARE NEEDED	26
	Criticisms of regional team's comparable sales methodology unwarranted	27
	Improvements needed to better account for production rate differences and tax effects	33
	Questionable policies cut tract values and set lease prices too low	37
5	DID POWDER RIVER COAL TRACTS SELL AT FAIR MARKET VALUE?	44
	The Secretary's responsibility	44
	The Secretary's discretion	45
	Postsale procedures did not provide a sound basis for determining fair market value	46
	Analysis of experimental and interim postsale fair market value determination procedures	46
	Most Powder River tracts sold for less than fair market value	56

CHAPTER		Page
6	HOW REASONABLE ARE THE COMPETITION AND FAIR MARKET VALUE REQUIREMENTS OF CURRENT LEASING LAW?	64
	Summary of the Federal Coal Management Program	64
	Disparities between coal leasing and development	67
	Coal development patterns reflect demand for coal production	69
	Analysis of coal leasing options	71
	Strong controls--key to successful lease negotiation program	74
7	CONCLUSIONS AND RECOMMENDATIONS	77
	Recommendations to the Congress	78
	Recommendations to the Secretary of the Interior	78
APPENDIX		
I	May 10, 1982, letter from Representative Edward J. Markey	80
II	June 23, 1982, letter from Senator Max S. Baucus	81
III	Analysis of actual selling price versus \$0.01 and \$0.02 per ton selling price-- Powder River tracts offered at \$25 per acre	83
IV	Revisions to the regional economic evaluation team's comparable sales analysis	84
V	Public and internal comments on new Minerals Management Service coal lease sale procedures	89
VI	Status of lawsuits related to the Powder River Federal Sale	91
VII	Glossary	92
ABBREVIATIONS		
Btu	British thermal unit	
DCF	discounted cash flow	
EIS	Environmental Impact Statement	
FCLAA	Federal Coal Leasing Amendments Act of 1976	
GAO	General Accounting Office	
MAB	minimum acceptable bid	

CHAPTER 1INTRODUCTION

The Powder River Basin Federal coal lease sale of April 28, 1982, was the largest in history. At the sale the Department of the Interior offered about 1.6 billion tons of recoverable Federal coal reserves for competitive leasing in southeastern Montana and northeastern Wyoming, received bids totaling a record \$54.7 million, and accepted bids of \$43.5 million. Although the Department considered the result a success, both the preparations for the sale and its outcome were controversial. Interior's leasing of so much coal in the apparent "soft" coal market and whether a fair return was received for the coal leases have been questioned. A last minute change in sale procedures and allegations of an unauthorized disclosure of proprietary data that may have compromised the bidding process, among other things, have added to the controversy. In addition, two lawsuits were filed--and remain pending--challenging the legality of the sale.

BACKGROUND

The Powder River Basin contains coal reserves estimated at about 142.5 billion tons, occurring in thick, closely spaced beds generally along the course of the Tongue and Powder Rivers. The concentration of coal in the region is greater than that of any other area of comparable size in the United States. Powder River coal accounts for about two-thirds of total western coal reserves. About 80 percent of the coal in the region is federally owned and it lies under surface lands that are about 73 percent privately owned.

The thickness of the Powder River Basin coal beds--in some places over 100 feet--is unsurpassed anywhere in the country. About 40 percent of the coal lies at depths suitable for large surface mining operations. The coal is sub-bituminous, low in sulfur content, and rated at 8,000 to 9,000 British thermal units (Btus) per pound.¹ Produced coal is marketed by rail to utilities and other customers in the West, Midwest, and Southwest.

An April 1982 Powder River Basin regional coal lease sale was planned as part of the Federal Coal Management Program established in June 1979. Under the program, Interior set a goal of 1.5 billion tons of Federal coal to be leased in three western regions in 1981 and 1982. Powder River Basin tracts to be offered were determined by a long process of land use planning--and then specific sale or "activity" planning--dating from the 1970s. This

¹Btu--a measurement of the heat-producing potential of coal; one such unit equals the amount of heat required to raise the temperature of one pound of water one degree Fahrenheit.

process was designed to include several interests--Federal, State, local, and private sector--in leasing decisionmaking. (See ch. 6.) The Bureau of Land Management, Department of the Interior, screened the region for areas of high development potential, environmental stability, preferred mining use by the surface owner, and higher value for mining use than for other uses. Activity planning occurred in 1980 and 1981, undertaken by a Regional Coal Team made up of Bureau field staff and Wyoming and Montana State officials. This planning included tract delineation (determination of exact location and size of new leases), ranking, and selection.

On February 22, 1982, culminating land use and activity planning, the Secretary of the Interior made the final decision to offer about 2.5 billion tons of coal in the basin at the sale. To be included were 19 coal tracts, 8 in Wyoming and 11 in Montana. Of the 19 tracts offered, 9 were classified as production maintenance or bypass tracts and 10 were considered opportunities for new production to occur.² Although only the new production tracts could be considered competitive tracts, Interior was required to offer all 19 by means of competitive bidding, in accordance with the Federal Coal Leasing Amendments Act of 1976.

One of the 10 new production tracts offered, adjacent to an existing small mine, was offered as a small business set-aside.³ Four others were involved in an intertract bidding procedure whereby the two tracts receiving the highest bids among the four would be leased. Before the sale was held, however, 6 of the 19 tracts were withdrawn--5 new production tracts because surface owner consents (permission to mine) had not been filed and 1 maintenance tract because of an error in published resource data. Because three of the tracts entered under intertract bidding were removed, that procedure was eliminated for the sale. On the date of the sale, five new production and eight production maintenance tracts were offered.

On April 28, 13 tracts totaling 1.6 billion tons of reserves were offered. As shown in table 1-1, bids of \$54.7 million were received on 11 of 13 tracts. The \$11.2 million bid for the Rocky Butte tract was rejected, however, because it did not meet Interior's fair market value criteria (discussed in ch. 5). Thus, the total accepted bids were \$43.5 million.

²Maintenance coal is needed by an existing mining operation to maintain production and employment levels. A bypass tract is one which can be economically mined around if no lease is awarded. Once bypassed, it is highly unlikely the Federal coal will ever be recovered.

³Under the Federal Coal Management Program, Interior may restrict competition for certain leases to bidders who qualify as small businesses as determined by the Small Business Administration.

Table 1-1

Powder River Sale Results
April 1982

<u>Tract</u>	<u>High bids</u>		<u>Cents/ ton</u>
	<u>Total (millions)</u>	<u>\$/Acre</u>	
Wyoming:			
*South Duck Nest Creek	\$ 3.61	\$ 3,125	2.5
Keeline	1.62	500	0.9
*Little Rawhide Creek	7.42	14,000	8.2
Rocky Butte (note a)	11.17	2,300	2.5
Spring Draw	25.90	7,025	8.0
Montana:			
Coal Creek	.35	340	0.6
*Colstrip A&B	.04	26	0.1
*Colstrip C	.02	26	0.1
*Colstrip D	.06	26	0.1
Cook Mountain	4.45	2,123	2.5
*West Decker	.02	500	0.4
*North Decker	-	-	-
*Spring Creek	-	-	-
Total bids	<u>\$54.66</u>	<u>b/\$2,553</u>	<u>b/3.6</u>
Total bids accepted	<u>\$43.49</u>		

*Maintenance tract.

a/Bid not accepted by Interior.

b/Average.

On October 15, 1982, a followup sale was held to offer tracts that were withdrawn from the April sale due to resource data errors or as a consequence of unfiled surface owner consents. In addition, the Rocky Butte tract was reoffered. Though five tracts were originally scheduled to be offered at the followup sale, only two tracts--Rocky Butte and Fortin Draw, both in Wyoming--were put up for sale. They brought total accepted bids of \$23.7 million. From both sales, in addition to 12 accepted bids totaling \$67.2 million, the Government will collect an annual rental on issued leases of \$3 per acre and a royalty of 12.5 percent of the value of coal produced.

CONTROVERSY RELATED TO SALE

Many issues surround the preparation for, conduct of, and outcome of the Powder River sale in April and the small followup

sale in October. The most immediately apparent of these are: Why did Interior change bidding systems just before the April sale? Did an unauthorized disclosure of Interior's proprietary coal data occur before the sale, and if so, what is its significance? Did the sale outcomes in April and October represent a fair dollar return to the Government?

Events related to these issues are summarized as follows: On March 19, 1982, Interior decided to institute a new bidding system for the April sale. This system was new for coal leasing, though it was related to procedures used in conducting Alaskan National Petroleum Reserve oil and gas lease sales. Under the new system, Interior eliminated the practice of publicly announcing Departmental estimates of coal tracts' values--values used as official "minimum acceptable bids"--prior to a sale. Instead, "entry level bids" not necessarily representing fair market value were to be announced, on the premise that fair market value would be determined after the sale outcome when actual competitive value could be better judged. The switch to entry level bids lowered the amounts required to open bidding on 19 tracts by about \$46.8 million, from \$117.4 million in minimum acceptable bids to \$70.6 million.⁴ The switch was widely interpreted--or misinterpreted in the view of the Department--as a substantial devaluation of the coal.

The reduction came under public scrutiny in May, just after the first sale, when Members of Congress voiced concerns about the sale and the national print media reported that lowering the values might have been related to an unauthorized disclosure in March 1982 of the minimum acceptable bid estimates of Interior's Minerals Management Service. Under the change of bidding systems, these estimates were not published by the Department. Although the particulars of the reported disclosure were unclear, the alleged release of data raised the question of whether coal industry officials gained access to this data and then pressured Interior to devalue the Powder River coal just before the sale. Interior received letters of inquiry from Members of Congress related to the sale, and in July 1982 congressional hearings on the sale were held.

Litigation challenging the sale was filed in April 1982 and is pending in the United States District Court in Montana. In one of two cases consolidated for trial, the National Wildlife Federation, the Northern Plains Resource Council, the Montana Wildlife Federation, and the Powder River Basin Resource Council allege that fair market value was not obtained for 8 of the 11 tracts bid on. If successful, the suit may result in cancellation of leases awarded for these tracts. See appendix VI for a summary of the status of lawsuits relating to the Powder River sale.

⁴Figures corrected for resource data errors, as discussed on p. 17.

For the followup sale of two Powder River tracts in October 1982, bidding procedures again changed, in line with new Bureau of Land Management coal regulations published on July 30, 1982. These regulations were the result of Departmental streamlining aimed at simplifying the administration of the process of exploring for and developing Federal coal. Postsale fair market value determination was retained under the new regulations, but oral and entry level bidding were replaced by single sealed bidding based on "minimum bids" set according to the nature of the tracts offered--new production or maintenance. This second change of bidding systems within a few months led to continuing questions among coal industry observers and others about Interior's rationale for its new procedures for offering coal for competitive leasing.

OBJECTIVES, SCOPE, AND METHODOLOGY

On May 10, 1982, Edward J. Markey, Chairman, Subcommittee on Oversight and Investigations, House Committee on Interior and Insular Affairs, requested that we review the major issues surrounding the April 1982 Powder River sale. He specifically requested that we look at:

- Possible violations of law or standards of conduct associated with allegations of an unauthorized disclosure of proprietary coal price data.
- The basis for the Departmental decision to change bidding systems.
- The question of whether or not "the public will receive fair market value for its coal in the Powder River Basin * * *."

Subsequently, Senator Max S. Baucus joined in the Chairman's request. (See apps. I and II, respectively.)

On August 26, 1982, as requested by the Chairman's office, we expanded the scope of our review to (1) evaluate the outcome of the Powder River sale on October 15, 1982, (2) account for new streamlined Bureau of Land Management coal leasing regulations issued on July 30, 1982, and interim Minerals Management Service sale procedures implementing the regulations, issued for public comment on September 13, 1982, and (3) monitor the progress of pending lawsuits. We also agreed to perform a detailed technical verification of the original coal value estimates developed for the April sale by Minerals Management Service field staff, in order to assess the validity of these estimates.

We conducted our review at Interior, Bureau of Land Management, Minerals Management Service, and Office of Policy Analysis headquarters offices in Washington, D.C., and Reston, Virginia. We also visited the Service's North Central Regional Office in Casper, Wyoming, and Bureau of Land Management State Offices in

Cheyenne, Wyoming, and Billings, Montana. We interviewed agency officials in these offices and reviewed agency documents, correspondence, and files related to the Powder River sale. We also obtained the views of coal industry spokesmen related to the sale. In addition, we contacted representatives of coal companies that either bid on or expressed interest in bidding on tracts offered at the sale.

Our review methodology, encompassing the expanded review scope, was as follows. Regarding possible unauthorized disclosure of proprietary information, we (1) reviewed available headquarters and regional office program correspondence files and (2) contacted officials within the Department, media representatives, and coal company representatives, seeking their views and any pertinent documentation regarding how and when the disclosure may have occurred, who may have been involved, and the impact on the April sale. Our analysis was limited by a lack of written documentation related to the alleged disclosure.

Our methodology regarding the changes in bidding systems included an attempt to understand the context of these changes--Interior's recent experience with coal valuation and bidding systems, its theoretical bases for these systems, and its streamlining efforts. We analyzed the system eliminated just before the April sale, as well as the new systems used at the April and October 1982 sales, and drew conclusions about the strengths and weaknesses of these systems and about Interior's rationale for changing systems.

Regarding the fair market value question, we examined the legal and economic factors included in Interior's leasing policies and procedures. We focused on the comparable sales analysis methodology used for both the April and October sales by the Service to (1) develop presale estimates of coal tracts' value for pricing purposes and--after the sale--(2) determine whether bids should be accepted as representing fair market value. As part of this work, we performed a detailed technical verification of the coal lease valuation methodology employed by the Service's regional evaluation team. With technical assistance from our Institute for Program Evaluation, we evaluated the team's methods in light of the specific criticisms voiced by Interior headquarters and identified needed improvements. Revised estimates of value for the tracts offered in April and October 1982 were developed by eliminating the effects of technically questionable features of the regional team's methods. We also evaluated whether or not the postsale fair market value determination procedures instituted for the Powder River sale were adequate to permit a reasonable assessment of fair market value.

Our findings related to a possible violation of standards of conduct related to the alleged disclosure of proprietary data are presented in chapter 2. Chapter 3 analyzes the rationale for the changes of bidding systems by Interior. Chapters 4 and 5 analyze

the issue of fair market value. Chapter 4 discusses the reasonableness of minimum bids set for the April and October sales; chapter 5 presents our analysis of whether or not fair market value was received for the coal leased at the two sales. In chapter 6, we examine whether the competition and fair market value requirements of current leasing law should be modified to bring the manner in which the Government leases coal in line with the way industry is developing the resource. Our evaluation includes an analysis of the advantages and disadvantages of possible leasing options which may remedy current problems as well as provide increased revenue to the Government for leased coal. Our conclusions and recommendations are presented in chapter 7.

The many issues surrounding this sale are technically complex, interrelated, and cannot be examined in isolation. The fair market value issue, for example, is perhaps the most complex. This issue has been studied extensively by Interior, but the many legal and economic factors which come to bear on it are still not fully understood within the context of coal leasing. To foster a better understanding of these issues and how they interrelate, this report examines the issues in the sequence in which events related to them occurred at the Powder River sale. As succeeding issues are analyzed, they require an understanding of those which were analyzed before them. Thus, understanding the analysis in chapter 5 of whether fair market value was received requires an understanding of the methods for estimating lease values discussed in chapter 4. By examining each issue as it builds on the others, we believe, the larger picture of what transpired at the Powder River sale can be brought into clearer focus.

No agency comments were obtained on this report. However, the technical results of our evaluation were discussed in detail with senior Department of the Interior officials.

Our review was conducted in accordance with generally accepted Government auditing standards.

CHAPTER 2ALLEGATIONS THAT A DISCLOSURE OF PROPRIETARYDATA COMPROMISED THE APRIL SALECOULD NOT BE SUBSTANTIATED

Early in May 1982, just after the April 28 Powder River sale, coal industry publications and major newspapers reported that the quick change of bidding systems undertaken by the Department of the Interior immediately prior to the sale might have been related to an unauthorized, premature disclosure of proprietary information in March. The disclosure allegedly involved estimated presale values, or minimum acceptable bids (MABs), calculated by the Minerals Management Service for individual Powder River Basin coal tracts scheduled to be offered for leasing at the sale. In changing bidding systems, Interior substantially lowered these estimates, or MABs, so that the amounts required for opening bids on 19 tracts were reduced by about \$46.8 million, from \$117.4 million to \$70.6 million. (See ch. 3.) Although particulars of the unauthorized disclosure as reported were unclear, this reported occurrence raised the question of whether the sale was compromised by coal industry officials gaining access to the MABs and then pressuring Interior to lower them before the sale.

In reviewing whether an unauthorized disclosure occurred and whether it was related to the change of bidding systems, we found one piece of written documentation of the alleged disclosure, and encountered considerable opinion within Interior that it occurred at some time in March 1982. In addition, we found procedural flaws in handling the MABs at both the Bureau and the Service field offices. However, we could not document whether or not coal industry officials gained premature access to the MABs and thereafter pressured Interior to lower them. Interior denies that its change of bidding systems for the sale resulted from coal industry "lobbying."

A discussion follows of details related to the reported disclosure and its possible influence on the April 1982 Powder River Basin sale, including (1) how the MABs were safeguarded before the sale, (2) whether the disclosure could be substantiated, and (3) how Interior responded to evidence of the disclosure. (In ch. 3, we present further discussion of why Interior changed bidding systems.)

MINIMUM ACCEPTABLE BIDS
NOT SAFEGUARDED PRIOR TO
APRIL SALE

Under then-existing coal program procedures, the Minerals Management Service was responsible for calculating MABs for individual tracts offered at the Powder River sale. Its North

Central Regional Office in Casper, Wyoming, calculated the MABs in February 1982 and transmitted them to the Bureau of Land Management's Wyoming and Montana State Offices on March 2 and March 8, respectively, so that they could be published--as minimum selling prices--in a notice of offering at least 1 month prior to the sale. At the same time, the regional office transmitted the MABs to Service headquarters in Reston, Virginia.

We found Service and Bureau control over the MABs in March to be inadequate. The MABs represented Interior's estimate of fair market value, and under Departmental regulations (43 C.F.R. 2.20) they were considered proprietary data to be protected from the time of their calculation until their publication by the Bureau. When it was created, the Service inherited the Conservation Division of the U.S. Geological Survey, which had detailed written standards for handling such data. The Bureau, however, did not have similar agency-wide guidelines. Bureau officials told us that since they generated little or no proprietary coal data, such guidelines were not needed. They explained that proprietary data generated by other agencies and handled by the Bureau was protected according to the stipulations of those agencies.¹ We found, however, that the MABs transmitted to the Bureau by the Service in early March did not contain markings to indicate their sensitivity, in violation of the Service's (Survey's) written standards. This oversight and the lack of Bureau guidelines contributed to the opinion of some Bureau field staff that the MABs were not highly sensitive data prior to the change of bidding systems. The staff also assumed that upon receipt of the MABs from the Service, they would be published in the Federal Register within a few days--the usual past practice. As a result of these several factors, the MABs were not closely safeguarded in the Bureau field offices in March.

The MABs were not published, however. At a March 19 meeting, Interior decided to eliminate them in favor of a new bidding system. (See p. 17.) A notice of offering incorporating the new bidding system--featuring "entry level bids" which were lower than the MABs--was published by the Bureau on March 25. Changing bidding systems so close to the sale had the effect of increasing the sensitivity of the MABs. The change meant that the MABs would remain proprietary, and not be released to the public either before or after the sale.

¹As of Dec. 3, 1982, the Bureau acquired minerals resource evaluation functions which had been transferred from the Conservation Division of the Survey to the Service in Jan. 1982.

CIRCUMSTANCES RELATING TO THE ALLEGED
DISCLOSURE DIFFICULT TO DOCUMENT

Though there is some evidence that a disclosure occurred, we were unable to verify details related to it, or to confirm that the disclosure--if it occurred--had an impact on preparations for the April sale.

We attempted to verify the disclosure's occurrence through both (1) written documentation and (2) interviews with numerous people, including Interior employees in field offices and at headquarters, representatives of coal companies, and media representatives. Although we found only one document related to the alleged disclosure, many Interior officials, including the Deputy Director of the Minerals Management Service at congressional oversight hearings held on July 15, 1982, acknowledged that an unauthorized release of data had occurred. In addition, numerous Service and Bureau field officials told us that the disclosure occurred, though they could not describe details of it.

Written documentation indicating that a disclosure did occur consists solely of a March 26, 1982, memo from the Service's North Central Regional Manager to Service headquarters:

"It has been confirmed to members of our staff that our MAB values have been distributed by unknown parties (not within the Service) and are in the hands of some industry, State, and private individuals. We can also safely presume that many Federal employees have these figures without a real 'Need to Know.' Our fear is, since not all persons or groups have access to those figures, the sale procedures may be compromised."

We talked to the Service's regional manager and his staff, but they could not further document the alleged disclosure nor state exactly how or when it happened.² We also talked to Bureau State Office employees in Wyoming and Montana, several of whom said that a disclosure occurred, but did not know how or when. Both Bureau and Service field staff members mentioned individuals who may have received the MABs, but we could not

²One Service official said a coal company representative contacted him on Mar. 25, and knew two MABs "down to three decimal points." The official told us that when contacted by the company representative he realized that a disclosure of the MABs had occurred, and reported it to the North Central Regional Manager, who subsequently wrote the memo to headquarters. The Service official declined to give us the name of the coal company representative. This matter has been referred by GAO to Interior's Office of the Inspector General.

document these staff members' statements. The individuals mentioned denied or declined to confirm or did not remember having access to the MABs.

In addition, we could not document an impact of the alleged unauthorized disclosure on sale preparations, or the allegation that the disclosure caused coal industry lobbying to lower the MABs. Numerous industry officials whose companies expressed interest in participating at the sale either declined to comment on the alleged disclosure or told us that they knew nothing of it, and denied having lobbied to lower the MABs. Interior officials also denied that such lobbying occurred. According to Interior, its change of bidding systems preceded its knowledge of the disclosure. It based its view on the fact that its new bidding system was introduced in a notice of offering on March 25, one day before the memo from the North Central Regional Manager informed Service headquarters of the disclosure.

Another possibility--that disclosed minimum acceptable bids could have aided individual companies in bidding--is also discounted by Interior. Officials said the presale publication of entry level bids effectively eliminated any advantage to a coal company that might have possessed one or more MABs. It is not clear under the circumstances that having the MABs a few weeks before another company would have been a substantial bidding advantage to any company.

DISCLOSURE NOT INVESTIGATED BEFORE SALE

Although our review of the reported disclosure is inconclusive, we found Interior's response to indications that a disclosure had occurred to be inadequate. Interior did not investigate the matter between March 26, when Service headquarters received the memo describing the disclosure, and the April sale date. In addition, the matter was not referred to Interior's Inspector General after receipt of the March 26 memo by Service headquarters, though such referral was appropriate under Departmental procedures (Departmental Manual, 355.2.1). Instead, a judgment was made that the matter did not compromise the upcoming sale, and sale preparations continued.

We believe Service headquarters officials in the Office of Onshore Minerals Operations should have immediately referred the matter to the Inspector General before the sale. They apparently underestimated the disclosure's potential impact on the upcoming sale. They considered the disclosure's implications for bidding advantage, but did not pursue the possibility that the disclosure could have been related to "lobbying" to change bidding systems. The fact that Interior introduced its new bidding system on March 25--one day before the memo was written asserting an unauthorized disclosure had occurred--does not in itself preclude the possibility of such a lobbying factor because the potential problem dates back at least to when the MABs

were first transmitted within Interior (Mar. 2), not to when the memo was written. Because the disclosure was not investigated before the sale, controversy arose in May when the disclosure was widely reported in the news media. Correctly or incorrectly, the alleged disclosure was linked in the public eye with the new bidding system instituted by Interior.

The Department's rationale for changing bidding systems for the April sale is the subject of chapter 3.

CHAPTER 3CHANGE TO ENTRY LEVEL BIDDINGUNTIMELY AND INEFFECTIVE

In 1982, the Department of the Interior made two changes in bidding systems used to conduct competitive coal lease sales under the Federal Coal Management Program. In March 1982, the Department adopted an experimental entry level bidding system for the April 28 Powder River Basin regional coal lease sale. Under the system, bidding began at "entry" levels instead of at levels considered under the previous system to be the coal tracts' fair market value. For a followup sale of two Powder River tracts on October 15, 1982, procedures changed further, under new Federal coal regulations issued on July 30, 1982. Interior eliminated oral and entry level bidding for the follow-up sale, in favor of single sealed bidding and "minimum" bids set differently for different kinds of tracts--new production or maintenance. Coal industry observers, the print media, Members of Congress, and others questioned why Interior made major procedural changes in March, so close to the date of such a large coal lease offering. They also questioned the procedural changes instituted for the October followup sale.

Both sets of changes were related to Interior's efforts to streamline its procedures for leasing coal, and its historical problems with coal valuation. Coal valuation is inherently difficult because of uncertain market factors, costs, and prices related to the long-term investment potential of a given coal lease.

The immediate concern prior to the April sale was that the Minerals Management Service's original presale estimates of the coal tracts' value--called "minimum acceptable bids"--were too high, were based on faulty tract appraisal methods, and might scare away bidders. Interior quickly changed systems in order to enhance bidding participation for tracts and to achieve what it thought would be more accurate tract valuation through postsale fair market value determination based on actual sale results. (See ch. 5 for detailed discussion of postsale fair market value determination.)

We found the change in systems to be an untimely and ineffective step which raised questions about the Department's ability to do reliable and accurate coal lease valuations. In replacing its previous coal valuation and bidding system--which had recognized limitations--Interior chose not to use its original estimates of the fair market value of the coal tracts offered at the April sale. (See ch. 4.) It replaced these estimates with entry level bids. This move lowered the amounts required for opening bids on the 19 tracts originally planned to be offered at the sale by \$46.8 million, from \$117.4 million to \$70.6 million. (As shown in table 3-3, for the 11 tracts

actually receiving bids at the sale, the reduction was \$17.5 million.) The new system was instituted in 6 weeks, and it did not work as envisioned at the sale. Accepted bids for 10 tracts totaled \$43.5 million, but bidder participation on April 28 was not high for either new production or maintenance tracts and the value of tracts was not "bid up" as expected.

Further changed bidding procedures were used at the follow-up sale in October, in accordance with the new coal regulations. The premise was that new production tracts should be offered at a minimum bid of \$100 per acre (rather than the previous \$25 per acre) and that competitive sealed bidding would encourage a bidder to offer its one "best bid" in order to gain the lease. Maintenance or bypass tracts were to be offered at the presale estimate of their actual value--\$100 per acre or higher. Two tracts were sold in October for a total of \$23.7 million, at an average of about \$4,500 per acre; one bidder appeared for each tract. The October sale did not represent a clear indication of the worth of the new bidding system because the two tracts offered sold to single bidders, and the system's effect of encouraging bidders to offer a single "best bid" could not be readily observed.

Notwithstanding the problems associated with the change to entry level bidding, accepted bids for the April and October sales combined totaled \$67.2 million for 12 tracts compared to MABs of \$70.7 million as adjusted by Interior economists. (See footnote, p. 25.)

Following are discussions of (1) the role of previous bidding systems in coal leasing, (2) the basis for and results of entry level bidding at the April sale, and (3) the basis for and results of minimum bidding at the October sale.

BIDDING SYSTEMS USED IN FEDERAL COAL MANAGEMENT PROGRAM PRIOR TO MARCH 1982

When the Federal Coal Management Program began in 1979, the Department of Energy Organization Act transferred from Interior to Energy the authority to implement alternative bidding systems for coal lease sales. The Energy Department established a cash bonus bidding, fixed royalty system for coal leasing.¹ This system, as used at recent competitive regional sales prior to the Powder River sale, worked as follows. After tract selection by the regional coal team and publication of the final Environmental Impact Statement (EIS), Interior field experts in the sale region calculated minimum acceptable bid values for each tract to be offered. These values were also official Government estimates of the fair market value of the tracts. Following the

¹On Dec. 23 1981, the Energy Department's authority to implement bidding systems was repealed, and this authority reverted to Interior. Under regulations issued on July 30, 1982, Interior retained the cash bonus, fixed royalty system.

final decision by the Secretary of the Interior to hold a lease sale, the values were transmitted to the Bureau of Land Management field offices in the States where the tracts were located. Then the Bureau published a sale notice which announced the sale, explained bidding procedures, and described tracts to be offered, including minimum bids. Sealed bids were to be received by the sale date, at which time any further oral bidding could proceed. After the sale, high bids were evaluated briefly at a joint sale panel meeting of Interior field officials. Then followed official Bureau acceptance or rejection of bids, Justice Department antitrust review of accepted bids, and lease issuance.

Until a few weeks before the Powder River sale in April 1982, sale procedures were as outlined above. On February 22, 1982, the Secretary of the Interior made the final decision on which coal tracts would be offered at the April 28 sale. Included were 8 tracts in Wyoming and 11 in Montana. (See table 3-1.) The minimum acceptable bids, or MABs, for these 19 tracts were calculated by the Minerals Management Service's North Central Regional Office in Casper, Wyoming.

The regional office staff used comparable sales analysis in its calculations. The comparable sales method involves analyses of the physical or geological characteristics of a previously sold tract against those of the tract being offered for sale. Adjustments to account for differences are made to arrive at a comparable value. Because of limited actual sales data, the regional economic evaluation team adopted a novel approach--using its analysis of a hypothetical Powder River mining operation--as the basis for making tract value adjustments. Its methodology is analyzed in detail in chapter 4.

The MAB calculations by the field staff for 19 tracts offered ranged from the regulatory minimum of \$25 per acre² to \$22,753 per acre, and from less than 1 cent per ton of mineable reserves to over 19 cents per ton, as shown in table 3-1. These MABs were generally accepted as Interior's calculation of fair market value.

²Increased to \$100 per acre under regulations issued July 30, 1982, and effective on Aug. 30, 1982.

Table 3-1

Minimum Acceptable Bids
for April 1982 Sale

	<u>Acreage</u> (note a)	<u>Mineable reserves</u> (MM tons)	<u>\$/</u> <u>Acre</u>	<u>Cents/</u> <u>ton</u>
Wyoming:				
Spring Draw	3,687	323	b/7,446	b/8.5
Rocky Butte	4,856	445	5,471	6
*Little Rawhide Creek	530	90	22,753	13.4
*South Duck Nest Creek	1,153	143	3,110	2.5
*Portin Draw	320	c/ 26.6	c/2,132	c/2.6
Kintz Creek	3,200	193	511	0.8
Timber Creek	3,669	167	25	0.06
Keeline	3,238	170	25	0.05
Montana:				
*Spring Creek	658	35	10,373	19.5
*North Decker	1,431	66	4,496	9.7
*Colstrip D	2,250	43.2	25	0.14
*Colstrip C	893	18.9	25	0.12
*Colstrip A&B	1,632	58.5	25	0.07
Coal Creek	1,033	60	25	0.04
*West Decker	40	5	25	0.02
Ashland (Decker- Birney)	1,949	119	6,307	10.3
Northwest Otter Creek	1,350	139	8,758	8.5
Southwest Otter Creek	1,821	130	4,216	5.9
Cook Mountain	2,096	178	25	0.03

*Maintenance tract.

a/Rounded to nearest acre.

b/Based on the regional economic evaluation team's correction of stripping ratio and Btu rating errors discovered after the sale. The original MAB was about \$14,162 per acre, or 16.2 cents per ton.

c/Based on the economic evaluation team's correction of a tonnage error discovered on Apr. 6, 1982. The original MAB was \$7,798 per acre, or 5.5 cents per ton. Because it was too close to the sale date to publicize the revised value, the tract was dropped from the sale and offered on Oct. 15.

The Service's regional office transmitted its results to Bureau of Land Management State offices in Wyoming and Montana on March 2 and March 8, 1982, respectively. At the same time, the recommended MABs were transmitted to Service headquarters in Reston, Virginia.

MAJOR CHANGES IN BIDDING SYSTEMS
IMPLEMENTED IN ONLY 6 WEEKS

When Service officials received the MABs in early March, they judged them to be too high and believed they might "chill" bidder participation and competition at the upcoming sale. Within a 6 week period prior to the sale, Service and other Interior officials made a major change in bidding systems, but without adequate analysis.

At a meeting during the week of March 8, 1982, the Assistant Secretary for Land and Water and the Service's Deputy Chief of Onshore Operations discussed the possibility of changing to an entry level bidding system. At a March 19 meeting called by the Assistant and Deputy Assistant Secretary for Energy and Minerals and the Deputy Assistant Secretary for Land and Water, the decision to change systems was made. Service headquarters staff worked out the details of the change over the weekend. A sale notice incorporating the new bidding system was published on March 25. On April 27, the Undersecretary of the Interior officially approved the new entry level bid procedures.

The following sections discuss (1) the nature of the entry level bidding system and how it affected Powder River coal offering prices and (2) whether entry level bidding worked as envisioned.

New Bidding System Used
For April Sale--Coal
Offering Prices Lowered

In connection with a move toward greater reliance on post-sale fair market value determination, Interior replaced the former minimum acceptable bidding system with an entry level bidding system. The entry level bids, designed to spur bidding competition, reduced the minimum offering price of the 19 coal tracts by about \$46.8 million.³ Interior had no records documenting, and could provide no written quantitative basis supporting the need for these reductions.

³The original MABs for all 19 tracts totaled \$144 million. Entry level bids totaled \$70.6 million. The apparent reduction was \$73.4 million, but this figure was adjusted to \$46.8 million because faulty resource data had been included for two tracts--Spring Draw and Fortin Draw. (See note a, table 3-2, p. 20.)

Interior's rationale for the new bidding system was that fair market value could best be determined after an actual sale because presale coal valuations--comparable sales analysis and discounted cash flow analysis--had proved to be historically difficult, particularly in regions such as the Powder River Basin where few leases had been sold over several years.⁴ In addition, the Department was concerned about the changing coal market in the region, and a recent sale experience--a February 1982 coal lease sale in Utah where three of the four tracts offered by Interior received no bids. (See ch. 4 for analysis of these issues.)

For the Powder River sale, Interior combined the concept of postsale valuation with the theory that competitive coal lease sale procedures should follow the standard bidding principles used at auctions. Auction procedures call for bidding to start at a "floor" level well below estimated fair market value. According to Interior, the floor price, below which auction houses will not sell an item, is normally 40 to 50 percent of the house's low estimate of the item's true value. This "floor" or entry level is meant to assure that bidding will not be discouraged.

On March 25, with no written quantitative basis, the Bureau published entry bid levels grouping the 19 Powder River Basin coal tracts into five categories of value:

<u>I</u> <u>8 cents/ton</u>	<u>II</u> <u>5 cents/ton</u>	<u>III</u> <u>2.5 cents/ton</u>
Little Rawhide Creek Spring Creek Spring Draw	Fortin Draw North Decker	Rocky Butte South Duck Nest Creek
<u>IV</u> <u>\$25/acre regardless of tonnage</u>	<u>V</u> <u>Intertract bidding--2.5 cents/ton, 2 tracts to be sold</u>	
Coal Creek Colstrip A&B Colstrip C Colstrip D Keeline Kintz Creek Timber Creek West Decker	Ashland (Decker-Birney) Cock Mountain Northwest Otter Creek Southwest Otter Creek	

⁴Discounted cash flow analysis is a coal lease valuation technique which sums future coal mine costs and revenues after discounting them to their net present value.

Although not all individual tracts were reduced in value, the aggregate reduction for 19 tracts was about 50 percent (not accounting for resource data errors which were found after the entry bids were set--see table 3-2). The Service gave the following reasons for these entry levels:

- Tracts with MABs set at \$25 per acre were kept at this regulatory minimum.
- Other tracts were placed in categories of value which would foster competition and not "scare away" the bidders.
- Categories of value were related to the recent selling price of Federal coal among private companies--2 cents to 5 cents per ton. The categories were also related--as discussed--to the bidding theory that "the published floor bid should be 40 or 50 percent of our best presale estimate of value."

Service officials could not, however, document the 2 cents to 5 cents per ton recent selling price of Federal coal among coal companies. They also could not explain why they did not use the values of the two Powder River Basin comparable sales tracts which had been identified by the regional economic evaluation team. These tracts sold in the 10 to 20 cents per ton range.

We were told that no econometric study of the selling price issue could be done in time for the sale, nor could we find any. The decision to change systems was made on March 19, the actual entry level bids were set during the weekend of March 20-21 by Service headquarters staff, and the notice of sale was published on March 25.

Table 3-2 compares Interior's original MABs calculated for the tracts offered at the April sale to the new entry bid levels. As shown, the change significantly affected 11 of 19 tracts offered. Taking into consideration an adjustment for errors in coal resource data on two tracts--Spring Draw and Fortin Draw--the net reduction was about \$46.8 million.

Table 3-2

Effect of Change from MABs to Entry Level Bids

<u>Tract</u>	<u>MAB</u>	<u>Entry level bids</u>	
	<u>Total \$</u> <u>(millions)</u>	<u>Total \$</u> <u>(millions)</u>	<u>Percent</u> <u>of MAB</u>
Wyoming:			
Spring Draw	a/\$27.5	\$25.8	94
Rocky Butte	26.6	11.2	42
*Little Rawhide Creek	12.1	7.2	60
*South Duck Nest Creek	3.6	3.6	99.6
*Fortin Draw	a/0.7	2.2	314
Kintz Creek	1.6	.080	5
Timber Creek	.092	.092	100
Keeline	.081	.081	100
Montana:			
*Spring Creek	6.8	2.8	41
*North Decker	6.4	3.3	52
*Colstrip D	.056	.056	100
*Colstrip C	.022	.022	100
*Colstrip A & B	.041	.041	100
Coal Creek	.026	.026	100
*West Decker	.001	.001	100
Ashland (Decker- Birney)	12.3	3.0	24
Northwest Otter Creek	11.8	3.5	30
Southwest Otter Creek	7.7	3.3	43
Cook Mountain (note c)	.052	4.5	8,654
Total	b/\$117.4	b/\$70.6	60

*Maintenance tract.

a/Values shown are recalculations by the economic evaluation team to account for errors in resource data for the Spring Draw and Fortin Draw tracts. The original MABs were \$52.2 million and \$2.5 million, respectively, and total MABs were about \$144 million.

b/Addition is inexact due to rounding.

c/As a consequence of an administrative error, this tract was inadvertently priced far above its estimated value. (See p. 60 for details.)

As shown, the values of five of nine maintenance tracts were lowered little or not at all. The four others were set at entry levels ranging from 41 to 99 percent (and in one exceptional case, over 300 percent) of their MABs. Among new production tracts, three were not changed in value; the other seven were set at entry levels ranging from 5 to 94 percent (and in one exceptional case, over 8,000 percent) of their respective MABs.

Entry Level Bidding Did Not
Work As Envisioned At April Sale

The success of the April sale as an experiment in entry level bidding was limited. Bidder participation, which Interior sought to encourage with its new system, was not high. Although bonus bids offered in April were record totals for such a sale, Interior's hope for a truly competitive coal auction was not borne out by the bidding for tracts.

The bids--totaling \$54.7 million for the April sale--were by far the largest aggregate amount paid for leasing Federal coal at a single sale. (See table 3-3.) But this was also by far the largest quantity of Federal coal ever offered for lease. One high bid, \$11.2 million for the Rocky Butte tract, was rejected as not representing fair market value. (The rejected bidder for the Rocky Butte tract appealed the decision within Interior, but withdrew the appeal when the tract was re-offered in October.) Excluding Rocky Butte, total accepted high bids for the April sale were \$43.5 million.⁵

⁵Bids on two leases, Coal Creek and Cook Mountain, have been accepted, but the leases have not yet been issued--the former awaits a decision by the Small Business Administration that the high bidder qualifies as a small business; the latter awaits surface owner consent.

Table 3-3

Powder River Bids Received and
Sale Results, April 1982
(millions)

<u>Tract</u>	<u>MABs</u>	<u>Entry level bids</u>	<u>Actual high bids</u>	<u>Number of bidders</u>
Wyoming:				
*South Duck Nest Creek	\$ 3.59	\$ 3.57	\$ 3.61	1
Keeline	.08	.08	1.62	2
*Little Rawhide Creek	12.06	7.20	7.42	1
Rocky Butte	26.57	11.17	11.17	1
Spring Draw	a/27.46	25.81	25.90	1
Montana:				
Coal Creek	.03	.03	.35	2
*Colstrip A&B	.04	.04	.04	1
*Colstrip C	.02	.02	.02	1
*Colstrip D	.06	.06	.06	1
Cook Mountain	.05	4.45	4.45	1
*West Decker	.001	.001	.02	2
Total bids received	b/\$69.95	\$52.44	\$54.66	14
Less rejected Rocky Butte bid	26.57	11.17	11.17	
Sale results	\$43.38	\$41.27	\$43.49	

*Maintenance tract.

a/Value shown is a recalculation by the Service's Economic Evaluation Team to account for errors in resource data discovered after the sale. The original MAB for Spring Draw was \$52.2 million. The original MABs for the 11 tracts receiving bids totaled \$94.7 million.

b/Addition is inexact due to rounding.

Based on total coal leased and bids received, Department officials called the sale results a success. On the other hand, actual total bids for 11 tracts fell \$15.3 million short of the total MABs of \$69.95 million and exceeded the total entry level bid minimums by only \$2.2 million. These figures raise a significant question about the workability of Interior's new bidding system as used for the Powder River sale.

Of the 13 tracts offered on April 28, 11 received bids. On 8 of these 11, there was only one bidder. Each of the other

three tracts experienced both sealed and oral bidding by two bidders. Eight of the 13 tracts offered were designated by Interior as maintenance tracts. Of these eight, five attracted one bidder, but two attracted no bidders and one attracted two. Of the five tracts considered new production tracts for the sale, two attracted two bidders and three attracted only one.

The April Powder River sale's preponderance of production maintenance tract offerings made it less than the best test of an experimental bidding system designed to enhance bidding participation. The presence of 8 maintenance tracts--by definition attractive to single operators--practically guaranteed that the total value of tracts would not be elevated very far above the "floor price" set by the "auctioneer," which was only "40 to 50 percent of his best estimate of value." (See p. 18.) As mentioned, actual bids were elevated only about \$2.2 million above the entry level minimums. For new production tracts only, where greater bidding participation might have been expected, the total increase was only \$2 million, or about 5 percent, not 100 percent or more as envisioned in Interior's bidding theory. Thus, the April sale results did not offer the Interior Department a solution to its longstanding coal valuation and fair market value determination problems. Instead, they revealed the continued seriousness of these problems. (See also chs. 4 and 5.)

MINIMUM BIDDING USED AT OCTOBER 1982 FOLLOWUP SALE

Due to changes in Interior regulations, entry level bidding was not repeated for the Powder River sale of October 15, 1982, at which two Wyoming tracts, Rocky Butte and Fortin Draw, were offered for competitive leasing. Instead, minimum bidding was used.⁶

Though emphasis on postsale fair market value determination was retained, the new system replaced oral bidding with single sealed bids, and it distinguished between stand-alone (new production) and maintenance or bypass coal tracts, stipulating different minimum bids for each. New production or stand-alone tracts would be offered at the new regulatory minimum of \$100 per acre regardless of their estimated market value. On the other hand, maintenance, bypass, or other tracts would be offered at a price representing the Department's best estimate of the "representative market value"--but not less than \$100 per acre.

⁶These minimums were floors beneath which bids would not be considered. Like entry level bids, they were not officially representative of fair market value.

Minimum bidding is based on the idea that competitive sealed bidding encourages a bidder to offer its one best bid--based on its own careful calculations, not on hypothetical Government calculations--in order to gain the lease. This eliminates the possibility that a bidder might render a sealed bid beneath its "best offer," and then if necessary raise it in oral bidding if other bidders for the tract appear. Such a possibility existed under the entry level bidding approach used at the April sale. Nonetheless, minimum bidding theory is similar to entry level bidding in that it depends on active bidder interest in tracts to insure honest, "best" bids.

Under the new system, the Rocky Butte new production tract was offered by Interior for resale at the regulatory minimum of \$100 per acre. Fortin Draw, a maintenance tract, was offered at a \$4,200 per acre value arrived at through comparable sales analysis using two maintenance tracts from the April sale, South Duck Nest Creek and Little Rawhide Creek. As shown in table 3-4, both tracts sold, each to a single bidder, at bids of \$1.4 million and \$22.3 million, respectively--totaling \$23.7 million.

Table 3-4

Powder River Followup Sale Results

Tract	Minimum bids		Actual bids		
	Total (millions)	Cents/ ton	Total (millions)	Cents/ ton	Number of bidders
Rocky Butte	\$0.49	0.1	\$22.34	5.0	1
Fortin Draw*	<u>1.34</u>	5.1	<u>1.35</u>	5.1	<u>1</u>
Total	<u>\$1.83</u>	b/0.4	<u>a/\$23.69</u>	b/5.0	<u>2</u>

*Maintenance tract.

a/Addition inexact due to rounding.

b/Average.

October sale results did not provide a clear indication of the worth of the new bidding system, because the two tracts involved attracted only one bidder each. There was little indication that either bidder expected competitors in bidding for the tract it wished to purchase, and therefore was compelled to offer its one best bid. Fortin Draw sold to the adjacent operator at a price 1 percent above the minimum bid. Rocky Butte sold for \$4,600 per acre to a single bidder--the same company that had placed the lone bid on the tract in April (\$2,300 per acre) which was rejected as less than fair market value.

Though the sale was not an indication of the worth of minimum bidding, because only two tracts were offered, it was of a scale small enough for experimental purposes. As such, the October sale was an improvement over the April sale because the scale of the earlier sale was too large to warrant the use of an experimental bidding system at the sale. It is still unclear what type of bidding system Interior will use in future regional sales. Current regulations afford wide discretion in this matter--so wide that they permitted Interior to switch from MABs to entry level bids and not violate regulations. The regulations do not contain guidelines for using untried or experimental bidding systems at regional lease sales nor otherwise limit the volume of coal which may be offered under such experimentation.

Notwithstanding the problems associated with the change to entry level bidding, accepted bids for the April and October sales, combined, totaled \$67.2 million for 12 tracts, compared to Interior's original minimum acceptable bid estimates of \$70.7 million as adjusted by Interior economists.⁷ Nevertheless, we believe the amounts received for these leases were substantially less than a reasonable determination of fair market value. As discussed in chapters 4 and 5, we reviewed Interior's initial determinations of fair market value and identified several technical problems which show the amounts received to be understated by roughly \$100 million.

⁷Adjustments made to account for resource data errors (see table 3-1).

CHAPTER 4

INTERIOR'S CRITICISMS OF COMPARABLE SALES ANALYSISUNWARRANTED, BUT IMPROVEMENTS ARE NEEDED

Interior used comparable sales analysis for calculating minimum acceptable bids (MABs) for leases being offered at Federal coal lease sales. The MABs are commonly accepted as Interior's presale calculation of fair market value. The Minerals Management Service's regional economic evaluation team followed this approach in preparing for the April 1982 Powder River sale. The MABs developed were discarded, however, when Interior management decided that they were not reliable lease value estimates. As discussed earlier, the MABs were replaced by lower entry level values designed to spur greater bidder participation at the sale.

This change was made in conjunction with a Departmental decision that fair market value would be determined after the sale based on consideration of competitive bids--and the comparative data derived from that competitive bidding--received at the actual sale. (See ch. 5 for discussion of this approach.) However, competition among bidders--the essential element of this new approach--did not ensue at the sale. At issue, in the absence of competition, are the adequacy of Interior's justification for not using the comparable sales analyses performed by the Service's regional economic evaluation team and the implications of this decision for determining and realizing the fair market value for Powder River coal.

We found that Interior's reasons for rejecting the regional economic evaluation team's analysis were not valid, although certain revisions were needed to the team's calculations. In the absence of sufficient competition at the sale, we believe Interior should have used the comparative sales analysis, but with revisions to eliminate certain inappropriate adjustments and other questionable reductions in tract values made by the evaluation team. By not making these revisions, Interior undervalued the MABs by over \$95 million. Because of weaknesses in the Department's postsale fair market value determinations (discussed in chapter 5)--Interior accepted bids substantially short of their value for 10 tracts at the April sale.

In this chapter we examine--in light of criticisms leveled by Interior management--the detailed methods used by the regional economic evaluation team for calculating MABs. After identifying needed improvements we show how the MAB values would have been affected had revisions been made to eliminate (1) two inappropriate adjustments--one a purely speculative adjustment designed to reflect economies of scale associated with different-size mining operations, the other a tax effect adjustment which should have been used only for those tracts set aside

for small businesses, and (2) the effect of a questionable policy which further reduced the value of certain small tracts. The revised MABs later--in chapter 5--became a yardstick against which actual bids are compared to derive our calculation of the amount of shortfall in fair market value received by the Government.

CRITICISMS OF REGIONAL TEAM'S
COMPARABLE SALES METHODOLOGY UNWARRANTED

As part of its justification for discarding the MABs, Interior management criticized the comparable sales analysis methodology employed by the Service's economic evaluation staff. However, management could not provide detailed information documenting weaknesses in the methods used. They did not appear to know details of the methodology itself, and in fact relied on similar methodology when it was used a few months later to develop offering prices for the followup Powder River sale of October 15, 1982.

While criticizing the analyses, Interior management did not examine in depth the specific methods the staff employed. Though the lack of detailed written reports explaining the analytical techniques used by the economic evaluation staff might be seen as contributing to this management oversight, it does not explain why management opted not to delve into the mechanics of such a critical analysis and--rather than discard it--make adjustments to it as warranted.

As part of the expanded scope of our evaluation, we performed an analysis of the methodology. We conducted in-depth interviews with, and examined the working papers of, the Service's economic evaluation team. Based on our examination, we believe the methodology they employed, while imperfect, was neither unreasonable nor inappropriate under the circumstances--and could have been revised for use in analyzing sale results.

Regional Team's Methods
Not Unreasonable

Because a competitive Federal coal lease sale had not been held in the Powder River Basin for more than a decade, Interior did not have "hard" data indicative of the value of the leases it planned to offer in April 1982. Federal and private coal leases had changed hands, however, in the assignment market--where private companies buy and sell various coal holdings, including Federal leases. Interior therefore attempted to obtain specific information on the characteristics of the leases changing hands and the terms of the sales.

The evaluation team searched the land sales records in five counties for comparable coal lease assignments in the Wyoming and Montana sectors of the Powder River Basin Federal Coal

Region. They requested detailed information describing the sales from the eight companies found to be involved in Powder River Basin lease assignments. Only two companies agreed to provide data sufficient for the Service to perform comparable sales analysis. This data involved July 1980 assignments of Federal, State, and private coal leases located in Campbell County, Wyoming. The purchasers were two major oil companies--Shell and Cities Service. Through its own analyses and discussions with the purchasing companies and the seller--Peabody Coal--of the two tracts, the evaluation team concluded that the sale of the Dry Fork lease tract to Cities Service was more representative of coal value in the region. This sale was the basis for the Service's analysis.

Use of the comparable sales method to value coal leases involves a series of adjustments which are made to account for differences between physical and economic characteristics of the sold tract and the tract being offered for sale. The regional office staff made adjustments for the following critical characteristics: Btu rating, sulfur content, reclamation and surface purchase cost, rail spur line cost, stripping ratio, production rate economies of scale, boxcut (the initial groundbreaking cost for new mines), tax effect, and bonus payment method.¹ Its methodology for making the adjustments, however, was new to the Federal coal program.

In essence, the evaluation team modeled a hypothetical mining operation in the Powder River Basin and analyzed how changing different aspects of the operation affected the price at which coal would have to sell for the mine to make a reasonable profit. This provided data on how hypothetical differences between physical and economic characteristics affect the profitability or value of the mining operation. Mathematical equations explaining how hypothetical differences affect value were developed and used to make adjustments for actual differences between the comparable tract sold on the assignment market and the tracts being offered for sale.

Although having no written or otherwise documented analysis to back up their criticisms, Interior headquarters officials expressed concern over several factors pertaining to the

¹Stripping ratio refers to the cubic yards of overburden (soil, rock, shale, etc.) which must be removed per ton of coal recovered. It is essentially the ratio of the thickness of the layer of overburden to the thickness of the underlying coal seam. On Montana tracts, three further adjustments were made--for (1) differences in mining costs and taxes between Wyoming and Montana, (2) different prices paid for Wyoming and Montana coal because of location and characteristics, and (3) for different mill levies among Montana counties.

comparability of the tracts used as a basis for the comparable sales analyses because, in their view,

- the demand for coal had changed since the comparable tract--Dry Fork--was sold;
- the comparable tract was sold in the private assignment market rather than in a competitive Federal coal lease sale; and
- the comparable tract was subject to different diligence (development) and royalty requirements.

Following is our analysis of each criticism.

Changes in Demand for Coal
Not a Major Factor

The timing of a sale is one of the tests for comparability among sold and offered tracts. There are no hard and fast rules prescribing how much time must elapse before a sale should no longer be considered comparable. However, it is generally accepted that the closer the sale date of the sold tract to the offering date of the proposed tract, the more comparable the sold tract. In relation to the MAB calculations for the April 1982 sale, Interior felt that the July 1980 sale of Dry Fork was too old for a meaningful comparison because the coal market underwent a dramatic change during the intervening period of nearly 2 years. When we asked Interior officials for evidence substantiating the dramatic change they cited, neither Bureau, Service, nor Office of Policy Analysis officials could furnish evidence to support their view that "the bottom had fallen out of the market."

The question of how much the market for Wyoming coal has changed in recent years is a key to understanding valuation problems related to the April and October 1982 Powder River sales. Although the market has changed somewhat, this alone does not--in our view--appear to warrant categorical dismissal of the comparable sold tracts. Our analysis of the Wyoming market follows:

- Demand for coal production--according to industry representatives--lags about 10 years behind coal contract dates. The type of demand for Wyoming coal has changed from a demand for new mine production to one for reserves to service existing contracts. In 1982, total demand for production though down from annual growth rates in the 1970s--sometimes as high as 28 percent per year, according to the Wyoming Mining Association--was up 9 percent over the preceding year. As a consequence of contracts written in the 1970s, demand for Wyoming coal is expected to increase at a rate of 3.5 to 4 percent per year through the end of the decade. Though new mines may not

be opened to satisfy this demand, companies nonetheless desire to add to existing reserves to service current contracts. Therefore, it can be argued that the demand for reserves is actually increasing annually and was possibly greater in 1982 than it was in 1980.

--The long-term contract prices for 8,100-Btu Wyoming coal--as reported in "Coal Week"--have not changed dramatically over the period between the date of the comparable sold tract (July 1980) and the Powder River sale (April 1982). The long-term contract price rose \$0.25 from \$6.75 per ton in mid-1980 to \$7.00 per ton in early 1981. The price remained at \$7.00 per ton until mid-1982 when it rose to \$7.50 per ton. Even if these gradual increases are attributed primarily to inflated coal mine operating costs alone, they would indicate more of a flattening market than a depressed one.

--A major source of information on demand for coal reserves, according to Interior, is its analysis of expressions of interest received from industry. Eliminating duplicate nominations, Interior's own presale calculations indicated a demand for approximately 6.1 billion tons of recoverable reserves of Federal coal in the Powder River Federal Coal Region. Only 1.6 billion tons were offered in April.

--According to the Service's regional economic evaluation team, short-term changes in the demand for coal do not affect its in-place value. Their effects may cause less coal to sell, but not cause coal to sell for less.

Thus, there is not enough empirical data to draw unequivocal conclusions on the "hardness" or "softness" of the Wyoming coal market. According to the Service regional economic evaluation team, buyers and sellers are both uncertain about the value of coal land and, consequently, expectations vary on both sides. Based on our analysis, we do not believe that the comparable tract sold in 1980 was too old for use in setting the value of tracts to be offered in 1982.

Assignment Market Transactions Make Good Comparables

Interior officials stated that because the comparable sales data came from the assignment market--where private companies buy and sell various coal holdings, including Federal leases--it was not suitable for use in comparable sales analysis. Although data from a competitive Federal coal lease sale would be preferable, the Uniform Appraisal Standards point out that arm's length transactions in the assignment market involving the

resale of a Federal lease are an acceptable alternative.² In addition, the specific assignment market tract used in comparable sales analysis by regional staff had several suitable characteristics. It was (1) a Federal lease in the Powder River Basin, (2) physically and economically similar to other coal properties in the area, and (3) sold competitively at arm's length--the seller received at least three expressions of interest in the lease and three bids as well.

Differences Between Diligence
and Royalty Rate Requirements
Not a Significant Factor

Interior argued that the assignment market tract was not comparable because it involved a pre-FCLAA--Federal Coal Leasing Amendments Act of 1976--lease which was subject to lesser diligence requirements and lower royalty rates.³ Although the comparable lease does predate the act, based on our examination Interior's arguments are not valid.

Concerning the lesser diligence requirements, the purchaser of the 1980 comparable tract told us when it was considering acquiring the tract in 1979, that it saw the pre-FCLAA lease as being at a disadvantage to a new lease. The purchaser explained that FCLAA was originally interpreted in coal leasing regulations as calling for production from old leases--including the comparable Dry Fork tract--in commercial quantities by 1986. If, however, a proposed mine's output would exceed 5 million tons per year, it qualified for a 5-year exemption. Because the purchaser's mine plan called for production of 12 million tons per year, it felt the extension would allow adequate time to bring the lease into compliance and thus overcome the perceived disadvantage. Looking at Interior's argument from the purchaser's point of view raises a substantial question as to

²Uniform Appraisal Standards For Federal Land Acquisitions, Interagency Land Acquisition Conference, 1973, p. 9.

³Pre- unlike post-FCLAA leases are not subject to the 10 year diligent development requirements and 12.5 percent royalty rates. The pre-FCLAA minimum royalty rate was 5 cents per ton. Concerning diligent development, pre-FCLAA leases were subject to no real diligence requirements--leases were issued for indeterminate periods and subject to readjustment every 20 years, upon condition of diligent development and continued operation. These "conditions," however, were not specified until after FCLAA was enacted. Interior then promulgated diligent development regulations requiring by 1986 (1) coal production in commercial quantities and (2) continued mining operations. No Federal coal lease, however, has ever been cancelled for lack of diligent development.

whether the diligence requirements of the pre-FCLAA lease caused it to sell at a premium or a discount.

In addition, though it is true--under current regulations--that the seller of a pre-FCLAA tract might expect some premium for the less stringent diligent development requirements accompanying the lease, the amounts of the premiums are difficult to determine. In our opinion, the price paid for the tract is more readily attributable to the level of competition for a highly desirable tract--one of the last unencumbered tracts with 100 foot thick coal seams--than to speculation over a possible premium.

Regarding the difference in royalty rates between pre- and post-FCLAA leases and the extent to which they have an impact on the comparability of the assignment market tract, we found that in this instance there is no apparent impact. Although there is a substantial difference between the royalty rates of pre- and post-FCLAA leases, the pre-FCLAA rate will be adjusted upward to the current post-FCLAA rate of 12.5 percent on December 1, 1987. According to the lessee, production was not scheduled to begin until 1987 or later if a coal customer was not found. Thus, the impact--on the lease purchaser--of the difference in royalty rates would be practically nil. According to the purchasing company, it assumed a 12-1/2 percent royalty rate when formulating its bid.

The seller's ability to exact a premium is influenced by the likelihood that prospective buyers will be able to begin producing soon enough to take advantage of the lower royalty rate. In this instance, however, the sale occurred in July 1980, less than 7 years before the scheduled (Dec. 1987) royalty rate increase date. The tract was sold and bought as a new production tract. Typically, under favorable conditions, such tracts take from 7 to 10 years to begin production. The National Coal Association contends that new mines may take as long as 14 years to begin producing commercial quantities. In our view it is unlikely that the seller expected much, if any, premium under these circumstances.

- - - - -

From these analyses, we conclude that under the circumstances, the economic evaluation team's approach was not unreasonable when the alternatives are considered. Interior had only the data from two comparable sold tracts on which to base its analysis. Lacking sufficient data from actual coal sales, the evaluation team devised a means for generating data, analyzing it, and using the results to value actual tracts. While the overall approach used by the evaluation team was reasonable under the circumstances, we do take issue with two specific tract value adjustments made by the team, as well as with certain questionable Departmental policies which further reduced

tract values. Our concerns and their respective impacts on estimated values for the Powder River coal leases are discussed below.

IMPROVEMENTS NEEDED TO BETTER
ACCOUNT FOR PRODUCTION RATE
DIFFERENCES AND TAX EFFECTS

The comparable sales analysis methodology employed by the economic evaluation team could be improved if speculative adjustments for differing production rates were eliminated from the analysis and if tax effect adjustments--aimed at recognizing the weaker capital structures of small businesses--were made only for those tracts specifically set aside for small businesses. Determining whether the production rate adjustments should be made, and if so, how, will likely require extensive studies to resolve the many uncertainties complicating the adjustments. Problems with the tax effect adjustment for small businesses, however, can be solved by reserving such adjustments for analyses of tracts set aside for small businesses and situations where small business participation may be anticipated. The need for each of these improvements and their effect on tract values are discussed below.

Adjustments for Production Rate
Differences are Speculative and Result
in Substantial Lease Undervaluations

The production rate adjustment was designed to reflect the economies of scale associated with different-size mining operations. Interior officials characterized the adjustment as "speculative," because of the large number of uncertainties which accompany it. We agree such adjustments are questionable because they require too many evaluative assumptions about factors influencing the size of future mining operations and annual production levels over time. Such factors are difficult, if not impossible, to predict with adequate levels of confidence. For example, to estimate the most likely annual production levels for the lease tracts offered, the economic evaluation team must predict the

- companies that will obtain the leases,
- purchasers of the coal,
- timing, terms, and conditions of the coal supply contracts entered into by the lessees with prospective buyers,
- production scale-up rates, and
- impact of the changing coal market and general economic conditions on the above and other factors.

The large number of uncertainties that must be considered to make a production rate adjustment reveals its speculative nature. As applied by the economic evaluation team, it resulted in substantial lease undervaluations, which we believe were inappropriate. The Service's economic evaluation team agrees that the production rate adjustment, as currently made, is of a speculative nature, but feels that some form of adjustment is needed. They recognize the need for extensive study of whether and, if so, how the adjustment should be made in the future, but feel that eliminating it from their analysis is not any more appropriate than including it.

We feel--under the circumstances--that making no adjustment is a more prudent course than making a questionable one. This is especially so since it is not clear, at this point, that separate adjustments--made in this case--are appropriate for production rate and stripping ratio factors. The impact of differences in stripping ratios is clearly documented, but that of differing production rates is not well defined. Economies of scale--cost savings--associated with different production levels may already be considered along with the costs of mining tracts with different stripping ratios. The Service's evaluation team does not fully agree with our view, but can provide no evidence to support the view that separate adjustments should be made. In addition, the evaluation team has not been able to obtain--as they have for their stripping ratio adjustment--industry confirmation on the extent to which differences in production rates affect lease value. In our view, until it can be determined that each variable has an independent impact on tract value the production rate adjustment should be eliminated from comparable sale analyses.

Further, a serious question exists as to whether such an "income related" adjustment--i.e., one that considers the impact of different production rates on coal mine costs and revenues--should be included in comparable sales analysis, which is a "market" oriented technique. Market oriented techniques normally include adjustments for only physical and geologic factors such as stripping ratios and other coal quality features. The Uniform Appraisal Standards point out that "The comparable sales approach normally should be stressed and care should be taken that it does not get lost among other evidence concerning less reliable approaches to value (cost analysis and income analysis)* * * it (comparable sales) is the only approach to value that reflects the balance of supply and demand in actual trading in the marketplace* * *".⁴ We believe that including an "income" adjustment for production rate differences in a "market" analysis approach is like "mixing apples with oranges." Moreover, as noted, it may "double account" for differences already considered in the stripping ratio adjustment.

⁴"Uniform Appraisal Standards for Federal Land Acquisitions," Interagency Land Acquisition Conference, 1973, p. 9.

Eliminating the production rate adjustment from the regional team's analysis substantially raises the estimated values of many Powder River coal tracts. As shown in table 4-1, according to our calculations, the Wyoming sector tracts were undervalued by about \$37.5 million, although one tract--Little Rawhide Creek--was overvalued by over \$2.4 million. Montana sector tracts were undervalued by over \$35.5 million. For the 11 Powder River tracts receiving bids at the April sale, the production rate adjustment reduced tract values by over \$73 million.

Table 4-1

Production Rate Adjustment Impact
on 11 Powder River Tracts Receiving Bids
at the April 28, 1982, Sale

<u>Wyoming tracts:</u>	<u>Impact on tract value (note a)</u>	
	<u>Increases</u>	<u>Decreases</u>
	<u>------(Millions)-----</u>	
South Duck Nest Creek		\$ 3.003
Keeline		22.440
Little Rawhide Creek	\$2.430	
Rocky Butte		0.267
Spring Draw		<u>14.212</u>
Subtotal (net)		<u>\$37.492</u>
<u>Montana tracts:</u>		
Coal Creek		9.162
Colstrip A & B		10.314
Colstrip C		2.886
Colstrip D		8.769
Cook Mountain		4.414
West Decker	-----Bypass-----	
Subtotal		<u>\$35.545</u>
Total		<u>\$73.037</u>

a/Figures not exact. See appendix IV for GAO's calculation of revised estimates of tract value.

Tax Effect Adjustments for Small
Businesses Should Not Always Be
Included in Comparable Sales
Analyses

The tax effect adjustment included in the evaluation team's comparable sales analyses rests on the assumption that some

bidders may be small businesses with weaker capital structures. Prevailing market conditions in the Powder River Basin, however, reflect the economies of large-scale mining operations in western States and offer limited mining opportunities for small businesses. Because applying the small business tax effect adjustment always results in a reduction to the estimated lease market value, we believe it should be made only for analyses of tracts set aside for small businesses and situations where small business participation may be anticipated.

Roughly 1.4 of the 1.6 billion tons (over 85 percent) of coal sold at the April and October 1982 Powder River sales was acquired by large, diversified mining and energy companies. Under these circumstances, reducing the value of Powder River leases in consideration of a potential small business tax effect was inappropriate and improperly lowered the estimated market value of the Wyoming leases.

In the economic evaluation team's analysis, only four of the five Wyoming leases were affected by the small business tax effect adjustment. The Keeline tract was unaffected because--as a result of other adjustments--its estimated value before the tax effect adjustment was a negative 2.7 cents per ton.⁵ Therefore, no adjustment was made. The Montana tracts all had negative value estimates as well. Table 4-2 shows how much the estimated value of each Wyoming lease was reduced.

⁵Before making its tax effect adjustment, the economic evaluation team made all the other adjustments pertaining to physical and economic characteristics. As a result of these adjustments, the analysis indicated some tracts had no value or a negative value. As discussed later in this chapter--under "minimum regulatory prices"--such tracts were offered at a price of \$25 per acre.

Table 4-2

Small Business Tax Effect Adjustment
Impact on the Estimated Value of
Wyoming Powder River Basin Leases

<u>Tract:</u>	<u>Reduction in</u> <u>estimated value (note a)</u> <u>(millions)</u>
South Duck Nest Creek	\$ 3.861
Keeline	-0-
Little Rawhide Creek	1.620
Rocky Butte	11.570
Spring Draw	<u>6.783</u>
Total	<u>\$23.834</u>

a/Figures not exact. See appendix IV for GAO's calculation of revised estimates of tract value.

Including a small business tax effect adjustment in comparable sales analyses is appropriate under some circumstances. For example, leases designated as small business set-asides--such as Coal Creek--might appropriately be candidates for a tax effect adjustment. Tracts receiving a number of expressions of interest from smaller companies might present another instance where such a tax effect adjustment is appropriate. During our evaluation, the economic evaluation team agreed that the adjustment should be made on a case by case basis after analyzing expressions of interest to determine the size of the companies likely to be involved in bidding for each lease. Service's headquarters concurs.

QUESTIONABLE POLICIES CUT TRACT
VALUES AND SET LEASE PRICES TOO LOW

In addition to comparable sales analysis, Interior has policies aimed at (1) considering the impact of tract size and location on market value, and (2) setting a minimum regulatory price on a dollars per acre basis for the coal. We found, however, that these policies are questionable--resulting in substantial undervaluations of coal tracts.

The following sections discuss each policy and its respective impacts on the valuation and pricing of tracts offered at the April 1982 sale.

Tracts Devalued According to
50-50 Split Policy

One of Interior's valuation policies in effect for the April sale was to define tracts which should appropriately be

offered at less than their full value. This was the so-called 50-50 split policy for small tracts--including maintenance tracts. Large tracts were offered at full value. Small tracts, however, could be priced at full value only if mining around the tract (bypassing it) would not cause a company economic sacrifice. This policy also required that the small tract which could be mined around could also be mined economically as part of a hypothetical "logical mining unit," but was not next to an existing unit.⁶

The economic evaluation team agrees that in the current coal market, which includes little demand for new mining operations, it is not clear whether a policy reducing the value of certain small tracts--especially maintenance tracts--next to existing operations is appropriate. Interior officials in the Office of Policy Analysis also pointed out that it is inappropriate to follow the split value policy when the comparable sales analysis valuation technique is used. This policy has recently been discarded. Nevertheless, the values of three tracts in Wyoming and one in Montana--calculated using comparable sales analyses--were cut in half, resulting in their devaluation by about \$25 million, as shown in table 4-3.

One of the four tracts--Fortin Draw--was later withdrawn from the sale because an error in resource data was discovered. Another tract--Spring Creek--did not receive a bid. Therefore, the 50-50 split policy affected only two tracts--Little Rawhide Creek and South Duck Nest Creek--whose values were reduced \$12 and \$3.6 million, respectively.

⁶Logical mining units are composed of that amount of land needed for efficient, economical, and orderly mining production.

Table 4-3

April 1982 Powder River Sale
Small Tract Value Split In-Half (note a)

<u>Tracts</u>	<u>Service-estimated market values</u>		<u>Market values after policy adjustment</u>	
	<u>Cents/ton</u>	<u>\$ Millions</u>	<u>Cents/ton</u>	<u>\$ Millions</u>
<u>Wyoming</u>				
Little Rawhide Creek	26.8	24.0	13.4	12.0
South Duck Nest Creek	5.0	7.2	2.5	3.6
Fortin Draw	11.0	5.0	5.5	2.5
<u>Montana</u>				
Spring Creek	39.0	<u>13.6</u>	19.5	<u>6.8</u>
Total		<u>49.8</u>		<u>24.9</u>

a/Values are not adjusted to correct errors in resource data identified in chapter 3. Also, see appendix IV for GAO's calculation of revised estimates of tract value.

The Fortin Draw tract was offered at the October 1982 sale, but this time its value was not reduced. According to Service officials, Bureau of Land Management coal leasing regulations published July 30, 1982, and interim Service coal lease sale procedures published September 13, 1982, superseded the earlier evaluation policy guidance. Thus under the new procedures--in effect for the October 15, 1982, Powder River Sale--Fortin Draw was offered at 100 percent of its estimated market value.

Minimum Regulatory Prices do not Assure
Market Value will be Received

A weakness surviving recent procedural changes, however, is Interior's policy of setting minimum regulatory prices for certain coal leases on a per-acre basis. Coal lease prices are set at the regulatory minimum when

--comparable sales analyses result in negative values,

--a small coal tract cannot be mined as part of a logical mining unit, or

--a small tract can be bypassed, but mining around it will not cause the mining company to suffer an economic sacrifice.

In July 1982 Interior raised the new minimum regulatory price from \$25 to \$100 per acre effective August 30, 1982, but this does not solve the problem. Coal is a heterogeneous resource occurring in various amounts, geologic formations, and qualities in different Federal coal regions. Regulatory minimums should be expressed in cents per ton per coal region to properly reflect coal value. The current policy of setting regulatory minimums on an acreage basis does not consider resource occurrence differences and can result in significant undervaluation of Federal coal and receipt of less than fair market value. Based on information provided by Interior's Office of Policy Analysis, the 6 Powder River tracts priced at the then regulatory minimum of \$25 per acre could have brought another \$5 million had they been properly priced on a cents per ton basis. We did not verify this information, however, and thus, did not include the \$5 million in our revised estimate of coal tract values. Nonetheless, we believe this policy needs to be changed.

The potential for substantial lease undervaluation can be seen through analysis of the amount of coal (in-place tons) in an average acre of those tracts priced at the regulatory minimum. According to the mining engineer on the economic evaluation team, estimating in-place tons per acre provides a common denominator for analyzing tracts which are geologically similar. Table 4-4 contains our analysis of the team's in-place tons-per-acre estimates for each of eight Powder River tracts priced at the \$25 minimum for the April 1982 sale. The analysis shows several instances of tracts being priced the same as those with only half as much coal per acre.

Table 4-4

Analysis of Differences Among In-Place
Coal Tons Per Acre For Powder River
Coal Tracts Priced at \$25 per Acre

<u>Tract</u>	<u>Average coal seam thickness</u>	<u>In-place coal tons per acre</u>
<u>Wyoming</u>		
Keeline	40	70,800
Kintz Creek	45	79,650
Timber Creek	25	44,250
<u>Montana</u>		
Coal Creek	50	88,500
Colstrip A&B	23	40,710
Colstrip C	25	44,250
Colstrip D	25	44,250
West Decker	52	92,040

Interior argues that when valuation analyses turn out negative values, and/or when coal might be bypassed if not sold, leases should be offered at a regulatory minimum sufficient to discourage nonserious or speculative bidders. In our view, recognizing the nature of Interior's market value estimates, discouraging insincere bidders is a questionable basis for establishing a minimum regulatory bid, and by itself does not provide for the receipt of fair market value.

Interior studies have questioned the use of regulatory minimums set on a per acre basis. For example, in a June 11, 1982, draft of an Office of Policy Analysis study entitled "Options for Assuring the Receipt of Fair Market Value for a Federal Coal Lease," a 2 cents per ton price was proposed as an immediate change in policy. The study's discussion of the proposed option was as follows:

"* * *The current \$25 an acre floor price is a nominal price. Greater assurance that fair market value was being received could be obtained by having a floor price that reflected a low estimate of the economic rents of coal tracts capable of competing in the near future for contracts to supply coal to a major coal user. Such rents in the Powder River Basin are estimated to be in the range

of two to seven cents a ton. Because of relatively flat supply curves, the economic rents on a per-ton basis are likely to be lower in this region than in other coal regions. Thus, a floor price of two cents a ton for Federal coal leases would likely be a significant improvement over the current \$25 an acre floor price in terms of assuring FMV receipt, while at the same time it would still be a conservative price unlikely to restrict the leasing of coal that is needed to meet the demand for coal reserves in any region.* * *

In addition, the Service's economic evaluation team, in its Montana and Wyoming Powder River Basin Coal Resource Economic Valuation reports (dated Mar. 10, 1982, and Mar. 26, 1982, respectively), questioned the \$25 per acre regulatory minimum then in effect. Both reports pointed out that if a lease is sold at the regulatory minimum, the return of monies would be substantially lower than if the Federal Government were to charge only 1 cent per ton.

The Montana report pointed out that in a typical Montana Powder River coal seam--50 feet thick--there are approximately 88,500 tons of coal per acre. If the Government would charge only 1 cent per ton, the report continued, the bonus shared by the State and Federal Government would be \$885 per acre. The Wyoming report contained a similar example involving a typical 70-foot seam containing 120,000 tons of coal per acre and selling for \$1,200 instead of \$25 per acre. These numbers are somewhat misleading, however, because the average coal seam thickness of the eight Powder River tracts priced at \$25 per acre is about 35 feet.

Though setting the minimum regulatory price on a cents per ton basis would not have guaranteed receipt of fair market value for the eight Powder River tracts analyzed, we believe it would have resulted in a more realistic value. Appendix III contains an analysis--for each of the April 1982 tracts priced at the then \$25 per acre minimum--of the actual selling price versus what these tracts would have brought if sold at either 1 or 2 cents per ton prices.

- - - -

In summary, we found that the approach used by Interior's regional economic evaluation team for estimating values for the Powder River coal tracts offered at the April sale was not unreasonable under the circumstances, although revisions were needed to back out some inappropriate adjustments included by the team. Revisions were needed for

--a purely speculative adjustment designed to reflect economies of scale associated with different-size mining operations (i.e., a production rate adjustment);

--a tax effect adjustment which should have been used only for those tracts set aside for, or of known interest to, small businesses; and

--the effect of an inappropriate policy--since discarded--whereby certain small tracts were reduced in value by 50 percent.

The resulting revisions--as calculated in appendix IV--show that Interior's original MABs were undervalued by \$95 million. In the absence of competition at the sale and weaknesses in the Department's postsale fair market value determinations, these revised values could and should have been used as the basis for evaluating the reasonableness of bids offered at the sale, as further discussed in chapter 5.

CHAPTER 5

DID POWDER RIVER COAL TRACTS SELLAT FAIR MARKET VALUE?

On April 28, 1982, Interior offered for sale 13 lease tracts containing roughly 1.6 billion tons of Federal coal. Of the 11 tracts receiving bids, we found that 9 sold for over \$110 million short of our revised estimates of their market value. At the October 1982 followup sale, one of the two tracts offered sold for over \$5 million less than our estimate of its value. As a result of weaknesses in Interior's postsale fair market value determination procedures and the manner in which they were applied, all but one of these bids were accepted by Interior. In our view, even considering declines in the demand for coal production, 10 of the 13 bids received were well below market value and should have been rejected. Of these 10, Interior rejected only 1 in its postsale evaluation.

We found Interior's postsale procedures for determining whether a bid should be accepted or rejected as fair market value weak and overly dependent on the existence of genuine competition at the actual sale. Absent competition, they did not provide a sound basis for determining market value. As such, the original lease value estimates--revised as noted in chapter 4--would have provided the essential benchmark Interior needed for determining the reasonableness of the bids offered for the Powder River tracts. Had this been done, we believe most of the bids would have been rejected.

Following is a discussion of the Secretary of the Interior's responsibility to obtain fair market value and his latitude in determining whether a bid should be accepted as fair market value. This provides the perspective needed for our analysis of weaknesses in Interior's postsale fair market value determination procedures--both the experimental procedures used for the April sale and the current interim procedures used for the October followup sale. In light of these weaknesses, we then evaluate the reasonableness of bids for tracts offered at the April and October 1982 sales when measured against our revised estimates of their real worth.

THE SECRETARY'S RESPONSIBILITY

Under the Federal Coal Leasing Amendments Act of 1976, which amended the Mineral Lands Leasing Act of 1920 [30 U.S.C. 201(a)(1)], the Secretary of the Interior must award coal leases by competitive bidding, but shall accept no bid which he determines is less than fair market value--a term not defined by the Act. Interior regulations, however, define it as "that amount in cash, or on terms reasonably equivalent to cash, for which in all probability the coal deposit would be sold or leased by a knowledgeable owner willing but not obligated to sell or lease

to a knowledgeable purchaser who desires but is not obligated to buy or lease."

The "fair" element of the term "fair market value" applies to the method of determining market value. The market value of the coal does not necessarily have to be "fair." Rather it is to reflect the lease's value at the time and place of the sale--fairly determined. Thus the method utilized by the Secretary of the Interior to determine the market value of the lease must be suitable for this purpose.

THE SECRETARY'S DISCRETION

The Secretary has substantial discretion in making fair market value determinations. In large measure this is because the assessment of market value, which involves the use of assumptions, is inherently imprecise. It is an informed estimate. Therefore, the Secretary's determination of fair market value is usually considered reasonable unless a clear error in judgment or abuse of discretion can be shown. Such abnormalities may arise only when the basis for the Secretary's determination is substantially flawed.

As stated earlier, before accepting a bid the Secretary is responsible for determining whether the bid reflects the tract's value at the time and place of the sale and that the method or basis for determining this value is fair. Interior recognizes that true competition among several bidders, each with a similar interest in and ability to mine coal efficiently--and relatively equal in all other respects--is the best indicator of market value and the strongest basis for accepting a bid as fair market value. Absent true competition, however, recent arm's length sales transactions for relatively comparable property are also valid indicators providing a sound basis for accepting a bid as fair market value. In the latter case, however, comparable sales analyses must be made to adjust for differences between the physical characteristics, market conditions, lease terms and provisions, and any other factors distinguishing the sold tract from the one(s) being offered.

In the case of the Powder River coal leases, analysis of data from the actual sale was the principal method the Secretary used for determining the market value. At issue is whether this method was used in a manner which reasonably supports Interior's fair market value determinations. Without genuine competition at the sale, however, we believe Interior's method did not provide an adequate basis--that is, constitute a fair method--for determining market value. In our view, comparable sales analysis of prior sales--revised as discussed in chapter 4--could and should have been used as the essential benchmark for bid accept/reject decisions.

POSTSALE PROCEDURES DID NOT
PROVIDE A SOUND BASIS FOR
DETERMINING FAIR MARKET VALUE

Interior's postsale fair market value determination procedures--like its bidding systems--are driven by Interior's desire to provide additional emphasis on market indications for measures of fairness or reasonableness. Both the experimental postsale procedures used for the April sale and the current interim procedures published on September 13, 1982, and used for the October followup sale, rely heavily on actual sale results data as the foundation for fair market value determinations. For this approach to work, however, at least some of the offered tracts must stimulate genuine bidding competition. Without good evidence of bidding competition, these procedures do not provide an adequate market basis for accepting or rejecting bids.

At the April sale, only two new production tracts--Keeline and the small business set aside, Coal Creek--brought any measure of competition, although even here it was limited to two bidders, with actual selling prices not even bid up to 1 cent per ton. Apart from this limited bidding, no other evidence of competition at either sale exists.

Even though real competition was not present, prior comparable sales analysis was not given much consideration in the experimental postsale procedures used for the April sale, nor in the interim procedures used for the October sale. Instead, and in keeping with its desire to use data from the actual sale as the measurement tool, Interior relied on an analysis of the bid(s) for each tract against the bids received for similar tracts in the sale as a basis for determining bid acceptance or rejection.

ANALYSIS OF EXPERIMENTAL AND
INTERIM POSTSALE FAIR MARKET VALUE
DETERMINATION PROCEDURES

The experimental postsale procedures used for the April sale and the current interim procedures used for the October followup sale impose the same three basic tests for bid accept/reject decisions. These tests for receipt of fair market value--involving (1) determination of adequate competition, (2) comparable high bid analysis, and (3) examination of special circumstances--are applied to the high bids received for each tract. The tests are ordered in a checklist fashion for an accept/reject decision for each step. Once an accept decision is reached, the analysis can be terminated and the bid accepted. Table 5-1 compares the postsale procedures used for the April and October sales.

Table 5-1

Comparison of Postsale Fair Market Value
Determination Procedures for Powder River Sales

<u>Experimental procedures (April 28, 1982 sale)</u>	<u>Interim procedures (October 15, 1982, sale)</u>
1. Determination of adequate competition	1. Competition analysis
a) competitive market structure	a) competitive market
b) bidder participation	b) bidder participation
c) high bid offered	c) high bid analysis
2. Comparable high bid analysis	2. Detailed comparable high bid analysis
a) range of bids analysis: high bid must be clearly within range of bids for comparable tracts	a) geometric mean analysis: high bid must exceed average value of comparable tracts
3. Examination for special circumstances	b) postsale adjustment for current market conditions
a) circumstances or additional public benefits such that the department might have greater than usual willingness to sell	3. Examination for special circumstances
	a) circumstances may be derived from Government losses due to delays, important public objectives, and uncertainties over tract comparability or the adjustment and estimation process

Both procedures call for a determination of whether "adequate competition" has been demonstrated, based on a combined tract profile which must consider three criteria--market structure, bidder participation, and high bid offered. If a bid cannot be accepted under these criteria, it is subjected to further analysis of "comparable high bids."

Both procedures for "comparable high bid" analyses consider available tract and bidding data from the actual sale but do not give appropriate consideration to prior arm's length sales of comparable lease tracts. The earlier experimental procedures differed slightly from the current interim procedures. The experimental procedures called for development of a range of

comparable value estimates from the bids for selected base tracts. If the actual high bid for the tract being analyzed was within or above the range set from bids on other tracts in the sale, the bid would have been accepted. Under the interim procedures, bids for comparable tracts offered at the sale are averaged to develop an estimate of market value to which the bid for the tract being analyzed is compared. In addition, a post-sale adjustment may be made for current market conditions. If the actual high bid for the tract being analyzed is above the adjusted average, it may be accepted.

Both procedures also call for consideration of "special circumstances." Under the experimental procedures, the examination for special circumstances was an integral part of the post-sale analysis. The intent was to indicate whether special circumstances or additional public benefits from leasing were such that the Department might have a greater than usual willingness to sell, and thus would be willing to accept the high bids as fair market value. Under the interim procedures, an accept/reject recommendation based on the results of the competition and comparable sales analyses is made before any special circumstances are considered.

Under the experimental procedures most of the special circumstances examined were related to revenue. Factors then warranting consideration included the likelihood of a higher bid resulting from a reoffering of the lease at a later sale, size of the potential final loss to the Government, expected revenue losses due to delays in mining coal, and impacts on future coal lease bidding. Under the interim procedures, the potential loss of Government revenue due to delayed leasing is the only revenue-related factor warranting consideration.

We found, however, that these three basic tests--the "competition analysis," "comparability analysis," and "special circumstances"--which Interior used to evaluate bids for both the April and October sales allowed virtually any bid to be accepted regardless of whether it approximated fair market value. Either set of procedures might have been acceptable for Powder River sales if several tracts had brought genuine bidding competition. Most of the leases offered, however, were maintenance tracts for which there is a predictable, noncompetitive demand in the western coal market. Due to their size and location, these tracts usually attract no more than one bidder. Since the bulk of the current demand for Federal coal is for maintenance leases, active bidding competition for new production lease tracts also is highly unlikely.

The principal weaknesses in the procedures and how they were applied are discussed below.

Weaknesses in the Experimental
Postsale Procedures Used for
the April 1982 Sale

The experimental postsale procedures used for the April 1982 sale were flawed on several counts, chiefly stemming from an overdependence on data from the sale itself. In addition, the procedures included questionable criteria and lacked clarity as to what weight should be assigned to individual factors considered under the three basic tests. These tests are discussed below.

Interior's determination of
adequate competition

In determining the adequacy of competition, two aspects of the "competitive market structure" were to be considered: (1) special advantages or disadvantages for any companies bidding or potentially bidding and (2) external conditions inhibiting competition in general. It was unclear, however, what the specific advantages or disadvantages might be and what, if anything, they meant in the context of accepting or rejecting a bid. For example, should bids from companies with different capital structures, assets, revenue sources, obligations, debt financing arrangements, etc., have been evaluated differently since all can result in some measure of advantage or disadvantage? Also, what were the external conditions inhibiting competition in general and what do they mean?

Other areas of analysis also appeared questionable. In considering "bidder participation," for example, procedures called for a record of the pattern of oral bidding. Interior officials could not, however, explain the relevance of bidding patterns to the receipt of fair market value.

In addition, the manner in which Interior applied the "bidder participation" criteria illustrates the weaknesses in its procedures, particularly as it involved the West Decker tract. According to an Interior analysis, bidding for the Coal Creek, West Decker, and Keeline tracts indicated true competition between rivals. In our view, bidding for the Coal Creek tract--a small business set-aside--and the Keeline new production tract appeared competitive. Bidding for the West Decker tract, however, did not appear to represent competition between two companies who both sincerely desired the tract because--as a bypass tract--it could only have been mined by one company, Peter Kiewit Mining Company.

West Decker was a maintenance tract covering only 40 acres. According to Interior officials, the tract would have been bypassed had it not been offered at the sale. Bidding for it, as well as for the Keeline tract which was sold before West Decker, involved the same two companies: Neil Butte Co., a consortium of ranchers not presently engaged in coal mining, and

Peter Kiewit Mining Co., which currently operates mines in the Powder River Basin.

When the Keeline tract was sold, both Neil Butte and Kiewit-Rosebud submitted sealed bids. When oral bidding commenced, 46 bids in \$10 per acre increments were made with Neil Butte offering the final winning bid of \$500 per acre. The West Decker tract was sold later. Only Kiewit-Montana Royalty submitted a sealed bid. Under the rules of the sale, because Keeline and West Decker were in the same price category, Neil Butte could participate in the oral bidding session. During oral bidding, Neil Butte made bids of \$100, \$200, \$300, and \$490 per acre. Kiewit-Montana Royalty countered with bids \$10 per acre higher and was the winning bidder with a final bid of \$500 per acre--the price to which it previously bid up the Keeline tract.

In our opinion, the sincerity of Neil Butte's bids for a 40-acre, maintenance-type tract only mineable by Kiewit is highly questionable. We believe Interior's decision to accept the winning bid for West Decker as the product of "true competition between rivals" was highly questionable and adds another measure of uncertainty about the Department's ability to make a fair market value determination. As a bypass tract West Decker could have been sold--without question--under "special circumstances" criteria.

Finally, under the "high bid offered" criteria for testing adequate competition Interior considered the size of the increase from the floor--or entry level--bid and from the maximum sealed bid to the final bid. But this seems to us very imprecise in the context of fair market value determination since neither is necessarily related to market value.

In addition, under the same criteria, a qualitative assessment of the adequacy of the high bid relative to high bids received for other comparable tracts in the sale was also required. How such an assessment might have been made and its bearing on fair market value determination are not clearly stipulated in Interior's procedures. In evaluating bids for the April sale, the economic evaluation team informed headquarters of their uncertainty over the usefulness of this type of assessment and its relationship to minerals evaluations.

Weaknesses of the "high bid offered" criteria allowed Interior to accept the bids for 6 tracts: Colstrip A & B, C, and D, Cook Mountain, Spring Draw, and South Duck Nest Creek on the basis that the bids exceeded presale or adjusted presale estimates of lease value.

Interior's comparable high bid analysis

The "comparable high bid" analysis of Interior's experimental procedures again did not adequately consider prior sales

information. Instead, it focused on data from the actual sale. A range of comparable value estimates for each tract analyzed was developed from bids on other tracts offered at the sale. Because the range could vary based on how many and which tracts were selected for the analysis, the criteria were theoretically weak. If the tract being analyzed was within or above the range, its bid was acceptable. Though such criteria permitted a wide range from the lowest to the highest bid offered for other tracts considered of comparable value in the sale, this theoretical weakness did not come into play at the sale. The bid for the Rocky Butte tract, for example, was not considered acceptable under this test.

According to Interior's analyses, the bid for Rocky Butte compared unfavorably against its presale estimate of value and actual bids received for three comparable tracts: South Duck Nest Creek, Keeline, and Spring Draw. The last two comparable leases were--like Rocky Butte--new production tracts. The new production tracts were quite similar in most attributes and South Duck Nest Creek, a maintenance tract, had an identical published entry level bid of 2.5 cents per ton of recoverable coal. Interior found that the bid for Rocky Butte equaled but 42 percent of its presale estimate of value and the same percentage of the actual bids received for the three comparable tracts. Since Interior's informal guidelines required rejection of bids less than 70 percent of comparable tract value, the bid for Rocky Butte could not be accepted under this criterion.

Interior's examination for special circumstances

Interior's experimental procedures also permitted consideration of "special circumstances" such as the possibility of a higher bid at a future sale, expected revenue losses, and impact on bidding for other tracts at future sales. Under this test, consideration was to be given to the reliability of information concerning the true extent of bidding competition and the true value of the tract in comparison with other tracts. Criteria were directed at identifying acceptance situations when the Government could have a greater than usual willingness to sell.

The potential for bypass of coal or shutdown of existing mining operations if a tract is not leased may be circumstances appropriately warranting special consideration. Care must be taken, however, to guard against potential abuses. Quantitative criteria expressed in tonnage, years of operation, mining conditions, or other factors would safeguard against acceptance of questionable bids and/or acceptance of bids on tracts with only limited bypass potential.

Accepting the bid for the Little Rawhide Creek tract, for example, under "special circumstances" would not have been as questionable if there had been clear, quantitative tests evidencing the propriety of its acceptance. As it stands, Interior's determination that the tract was a potential bypass

tract--qualifying it for consideration under special circumstances--was highly questionable. We believe the tract's bypass potential is not clear because it contains 90 million tons of coal in 100 to 125 foot thick seams, is next to unleased Federal coal, and beneath a comparatively shallow layer of overburden.¹ With a stripping ratio of approximately 1.5 to 1.0, such a tract--clearly one of the best offered--could support continued operations at the Powder River Basin's largest mine for 5 years or more. The economic evaluation team pointed out that although the tract's potential for bypass is not great, there nonetheless is some--albeit limited--potential, which was all the bid acceptance criteria required.

The weakness of this test becomes even clearer when examined in light of the procedures Interior followed in setting the price for the Little Rawhide tract. The economic evaluation team originally valued the tract at 26.8 cents per recoverable ton of coal or roughly \$45,500 per acre. In deference to the 50-50 split policy then in effect, the tract's value was cut in half to 13.4 cents per ton--about \$22,750 per acre. Next, Interior management determined--without the benefit of supporting economic analysis--that the tract's selling price would be 8.0 cents per ton--roughly \$13,600 per acre. In effect, Little Rawhide Creek thus was priced at about 30 percent of its original estimated value. The sale bid for the tract was 8.2 cents per ton--about \$14,000 per acre. Despite the tract's substantial undervaluation, the only postsale fair market value test the bid could pass came under the "exception to the rule" category of "special circumstances". Considering the questionable procedures governing the determination of tract value and the tract's limited bypass potential, we question Interior's determination to accept the 8.2 cents per ton bid for Little Rawhide Creek.

Weaknesses Of Interior's
September 13, 1982
Interim Postsale Procedures

The interim postsale procedures used for the October followup sale contain many of the same flaws as the earlier procedures. The (1) competition analysis, (2) detailed comparable high bid analysis, and (3) examination of special circumstances tests, discussed below, indicate that more rigorous bid evaluation is needed. Like the experimental procedures, their basic weaknesses stem from similar overreliance on actual sales data, which--absent competition--is an uncertain indicator of market value.

¹Overburden is the soil, rock, shale, etc., covering a coal seam.

Interior's competition analysis

Under "competition analysis," Interior deleted the previous test of "external conditions inhibiting competition in general" and substituted "consideration of the known existence of a relationship among bidders on the tract which might influence their competitiveness." Exactly how such relations might come to light, what kind of relationship(s) might be considered, and how they would be weighed in the context of fair market value, however, are unclear.

In considering "bidder participation," the number of reasonable bids submitted for the tract is the only factor considered. What constitutes a reasonable bid, however, is not defined, but can--according to the procedures--be determined, based on a screening process similar to the one used under the "high bid offered" criteria. However, the high bid offered procedures do not explain the screening process or how it should be applied.

The "high bid offered" criteria include a qualitative ranking of high bids on tracts relative to acceptable high bids on comparable tracts in this sale and prior sales. This procedure raises a question as to the propriety of using qualitative assessments in what are essentially quantitative fair market value determination procedures. Even if this question is overlooked, the procedure is not explicit enough to suggest how the bids for offered tracts could be determined as acceptable through a qualitative assessment. Nor is it clear--as was the case with the experimental procedures--how the assessment would be made in the absence of competition.

Since the two tracts offered at the October sale received only one bid each, the "competition analysis" criteria of the interim procedures did not apply. However, because of the above described weaknesses, these interim procedures continue to be questionable.

Interior's detailed comparable high bid analysis

Under "detailed comparable high bid analysis," prior sales information is again given little consideration. As stated earlier, we believe that when genuine bidding competition does not occur, comparability analysis of prior sales should be the primary factor influencing fair market value determination. The interim procedures, however, only mention utilizing prior sales information but do not stipulate how the information will be used. Instead, they discuss how an average comparable value estimate should be developed for each tract using data from the actual sale.

There is a serious question whether the average of bids rendered without competition--none of which may equal market value--should be used as a criterion for determining if another

bid equals market value. The procedures also allow for an undefined postsale adjustment for changes in coal market conditions. The ability to select the bids to be averaged and then to adjust the average in an undefined manner allows Interior broad latitude to accept or reject virtually any bid and, as we discuss below, to apply bid acceptance criteria in an inconsistent manner.

Interior's "detailed comparable high bid" analysis for the Fortin Draw and Rocky Butte tracts relied on data from tracts sold at the April sale, since only two tracts were offered and data was lacking from the October sale itself. However, considering that virtually none of the April sale tracts sold competitively, Interior's decision to use them as comparables was questionable. In our view, it is difficult to see how essentially noncompetitive sales can be used as a yardstick for fair market value determinations. In addition, Interior's inconsistent treatment of the sales data, which did not consider its own criticisms of the methodology (discussed below) raises additional questions about the validity of this aspect of the current fair market value determination procedures. Below, we evaluate how Interior analyzed bids for Fortin Draw and Rocky Butte.

--The Fortin Draw tract was analyzed against the Little Rawhide Creek tract sold in April 1982. The physical characteristics of each tract were compared and adjustments made to account for differences in average Btu rating, reclamation and surface purchase costs, average stripping ratio, and tax effects. The Btu and reclamation adjustments were minor, reducing the comparable tract's value base about 1.4 cents from 8.2 to 6.8 cents per recoverable ton. No stripping ratio adjustment was made because the tracts were nearly identical in this characteristic. Based on Interior criticisms of regional comparability analysis methods voiced after the April 1982 sale, no additional adjustments should have been made. However, Interior further reduced the 6.8-cent value by another 2.6 cents to account for small business tax effects, even though no small business was involved. Ironically, Interior previously criticized this adjustment as speculative and unnecessary. Including it in the postsale analysis reduced the estimated value of the Fortin Draw tract from 6.8 to 4.2 cents per recoverable ton--thus making the 5.1 cents per ton offered more acceptable.

--The comparable high bid analysis for the Rocky Butte tract featured the same adjustments as Fortin Draw--plus a production rate adjustment. The production rate adjustment--like the one for tax effects--was previously criticized as speculative by Interior. This adjustment was the largest made in the analysis of two comparable tracts--Keeline and Spring Draw--taken from the April

1982 sale. If one had been made for the Fortin Draw tract it would have, according to the economic evaluation team, driven the tract value down to a negative number.² Conversely, if one had not been made for Rocky Butte, its value before the tax effect adjustment would have been less than zero--making virtually any bid acceptable and possibly calling into question Interior's decision to reject the April 1982 Powder River sale bid of 2.5 cents per ton.

Interior officials were unable to explain why (1) they applied the production rate adjustment in the case of Rocky Butte but not in the case of Fortin Draw and (2) a small business tax effect adjustment was made even though no small businesses were involved. These inconsistencies, unaccompanied by a sound technical explanation, lead us to conclude that Interior needs a more objective method for making fair market value determinations. From our evaluation of the April and October 1982 Powder River sales, and the attending pre- and postsale procedures, it is not clear--in this case--whether Interior's analytical efforts are directed more at supporting preconceived views of value than at fairly determining it.

Interior's examination for special circumstances

The interim procedures, unlike the earlier experimental ones, provide for "examination of special circumstances" independent of--but concurrent with--an accept/reject decision based on the competition and comparability analyses discussed above. The examination is intended to reveal special circumstances having an overriding effect on the accept/reject decision. Some of the same factors examined under the experimental procedures are still considered. According to the interim procedures, the special circumstances may be derived from Government losses from the delay in sale of tracts, consideration of important public objectives (e.g., potential coal bypass situations), and uncertainties in the comparability of tracts used for comparison or in the adjustment and estimation processes.

Again, allowing adjustment for such factors as Government losses due to delays in lease sales or uncertainties about comparable tracts and/or their valuation provides an even greater measure of flexibility in an already pliant fair market value determination procedure.

- - - -

²The economic evaluation team calculated a production rate adjustment of 16.95 cents per ton. Applying this adjustment would have reduced the value of Fortin Draw to a negative 10.15 cents per ton.

In view of the substantial weaknesses in Interior's post-lease fair market value determinations, just discussed, the question of reasonableness in accepting bids for tracts offered at the April and October 1982 sales is raised. Our analysis follows.

MOST POWDER RIVER TRACTS SOLD
FOR LESS THAN FAIR MARKET VALUE

We found that bids accepted for tracts at the April 1982 Powder River sale were less than half of our revised estimates of market value. Bids at the October followup sale were also well below estimated market value. At issue is the scope of the Secretary of the Interior's discretion in determining to accept a bid as representing market value. In examining the Secretary's determinations of market value, the basic question is one of reasonableness. Can a decision to accept or reject a bid be logically justified or was there a clear error in judgment? Our analysis of accepted bids as a percentage of our revised value indicated that Interior erred in accepting many bids for both new production and maintenance leases offered at the two sales.

Only one of 11 high bids at the April sale--that for the Cook Mountain new production tract--appears clearly acceptable. Two other new production tracts--Spring Draw, offered at the April sale and Rocky Butte, offered at the October sale--received bids that while not clearly unacceptable in our view, are at least questionable. In our opinion, all of the April and October sale bids for maintenance tracts should have been rejected. The following sections discuss our analysis of the reasonableness of bids for new production and maintenance tracts, respectively.

Most New Production Tracts
Received Unreasonable Bids

Of the five new production tracts receiving bids at the April sale, the bids for three tracts--Keeline and Rocky Butte in Wyoming and Coal Creek in Montana--were less than a 30 percent lower limit of our revised estimates of market value and, we believe, clearly unacceptable.³ The bid for Spring Draw was

³The 30 percent limit, as discussed later in the text, was derived from the Dec. 1982 private assignment market sale of the Dry Fork coal tract in the Wyoming Powder River Basin. The tract, which sold at a distress sale for 30 percent of its July 1980 competitive purchase price, was originally used in Interior's comparable sales analyses to estimate the value of Federal coal leases in the Powder River Basin. We use the 30 percent figure as an indicator of the lowest possible level of bid acceptability.

approximately 48 percent of our revised value and at least questionable, even under the circumstances, while the bid for Cook Mountain exceeded both the Service's and our revised estimates of tract value. The bid for the Rocky Butte tract, reoffered at the October followup sale, was approximately 60 percent of its estimated value and again, while not clearly unacceptable, is at least questionable under the circumstances. Table 5-2 contains an analysis of the bids received for Wyoming and Montana new production tracts against our revised estimates of value calculated in appendix IV.

In determining the reasonableness of bids for new production tracts, some consideration must be given to the change in demand for new coal production. As discussed in chapter 4, the bulk of current demand for Wyoming coal likely stems from supply contracts written in the mid-1970s or earlier. The scarcity of opportunities for new coal supply contracts makes acquisition of new production tracts a somewhat risky proposition and drives down their value accordingly. Although the extent to which tract value is reduced is uncertain, a recent distress sale in the assignment market gives some indication of the impact of changes in demand on market value.

Table 5-2

Reasonableness of Bids Analysis
for Powder River New Production Tracts

	GAO revised value ----- (cents per ton)	Actual bid value ----- (cents per ton)	Percent of revised value -----	GAO revised value ----- (-----\$millions-----)	Difference
Wyoming Sector:					
April 28, 1982					
Keeline	12.6	.95	7.5	21.5	1.6 19.9
Rocky Butte	a/ 9.2	2.5	27.2	41.1	11.2 29.9
Spring Draw	16.7	8.0	48.0	54.1	25.9 28.2

Wyoming Sector:
October 15, 1982

Rocky Butte c/8.25 5.0 60.0 36.7 22.3 14.4

a/Based on July 1980 sale of the Dry Fork, Wyoming, tract which Interior used as the comparable tract for estimating the value of the Rocky Butte tract.

b/The economic evaluation team originally valued the Cook Mountain tract at a negative 7.3 cents per ton. Even after eliminating the team's 2.5 cents per ton adjustment for production rate differences, however, the estimated tract value was still negative--a minus 4.8 cents per ton.

c/Based on the revised estimates of market value for the Keeline and Spring Draw, Wyoming, tracts which Interior selected as the comparable tracts for estimating the value of the Rocky Butte tract.

The sold property is particularly useful to our analysis because it was the comparable tract used by the Service's regional economic evaluation team to develop presale lease value estimates for the April sale. Containing three Federal leases and some State and fee lands, the property was originally acquired in July 1980 for approximately \$75 million. The Service valued the Federal leases at almost \$68.5 million--about 91 percent of total property value. The entire property recently sold for approximately \$23 million. Assuming the same 91 percent ratio of Federal leases to total property value, the Federal portion sold for roughly \$21 million--about one-third of the July 1980 value.

The usefulness of this recent distress sale, however, must be substantially qualified. The motivation for such a sale and other constraints operate against the receipt of fair market value and thus limit the usefulness of distress sale data in measuring fair market value. We understand, for example, that the selling company was being acquired by a larger concern which needed cash to pay off loans taken to finance the acquisition. The liquid assets of the company being acquired would provide a ready source to the future parent company. Accordingly, the company being acquired was directed on short notice to dispose of certain assets for whatever the market would bear. In order to ensure tax benefit accrual to the company being acquired, the sale had to be completed within a few weeks but definitely before a final merger date. Though corporate officials would neither confirm nor deny our understanding, the motivation for this sale--and the time constraint imposed--clearly differ from those surrounding a Federal coal lease sale and must be weighed accordingly.

The facts pertaining to the distress nature of the sale were undoubtedly reflected in the coal market in the form of lower prices. Though the usefulness of the sale results as an absolute yardstick for market value is questionable, it might be indicative of the "rock bottom" or least value of a comparable new production tract. As such, we have used the results as the lower limit of reasonableness in Interior's discretion for accepting bids as fair market value.

If used as a least value indicator, the recent sale results suggest that only new production tracts receiving bids of at least one-third or more of their estimated presale value might even be marginally acceptable. April sale bids for the Keeline and Rocky Butte and Coal Creek tracts--which were 7.5, 27.2, and 3.5 percent, respectively, of their revised MAB values--fall beneath the least value cutoff and thus clearly were not acceptable. Since the Rocky Butte tract, when reoffered at the second sale, received a bid equal to about 60 percent of its value, its acceptance, while questionable, does not appear to be clearly unreasonable under the circumstances.

The bid of \$25.9 million on the Spring Draw tract was approximately 48 percent of our revised estimate of market value. Although we again have some concerns, under the circumstances, Interior's acceptance of this bid does not appear clearly unreasonable when declines in the demand for new mine production are weighed. The other tract--Cook Mountain--was originally valued at less than one-tenth of 1 cent per ton (0.029 cents per ton or \$25 per acre). However, when Interior included it as one of four candidate tracts for the first planned test of the experimental concept of intertract bidding, it was offered at a 2.5 cents per ton entry level price. Since surface owner consents for the other three candidate tracts were not filed, the intertract bidding experiment was abandoned. Through an oversight, however, Interior left the Cook Mountain tract priced at 2.5 cents per ton. A bid for that amount was made and, in our view, it was the only clearly acceptable one of the April sale.

All Bids for Maintenance Tracts Were Unreasonable

Of the six maintenance tracts receiving bids at the April sale, two were in Wyoming and four in Montana. Our lower limit test--30 percent of revised tract value estimates--used in measuring the reasonableness of bids on new production tracts is not appropriate for judging bids for maintenance tracts. Because the demand for maintenance tracts cannot be shown as varying dramatically over recent years, the bids for them should not have changed over the same period. Maintenance tracts, therefore, should bring approximately the same price today as when tracts were nominated for sale in 1980. The bid acceptance test for maintenance tracts, therefore, should closely approximate estimated tract value.

We found that the bids for two Wyoming tracts--South Duck Nest Creek and Little Rawhide Creek--were less than 23 and 32 percent of our revised estimates of market value, respectively, and thus were clearly unacceptable. The bids for three of the four Montana tracts--Colstrip A&B, C, and D--were \$25.50 per acre or .07, .12, and .14 cents per ton, respectively, and also unacceptable. Although the bid for the remaining tract--West Decker--was unreasonable, that is, less than fair market value, it probably should have been accepted because it involved a bypass situation.

For the Montana tracts, we believe the bids for the Colstrip tracts were unreasonable because (1) the minimum regulatory prices Interior set for the tracts did not reflect lease value and (2) the revised estimate of the tract value for Colstrip D is 3.4 cents per ton, or 25 times the actual bid. Considering the relative comparability between the tracts and that Interior's economic evaluation team and Office of Policy Analysis suggested minimum regulatory prices of 1 and 2 cents per ton, respectively, we question Interior's determination that

bids of less than .15 cents per ton represent fair market value.

For the Colstrip tracts, the winning bidder was the only company expressing interest in the leases and also the only bidder. In these situations, Interior has custom-fitted a lease to the adjacent company. Such leases are of little value to other companies desiring to open a new mine in the area. In attempting to value these leases, however, Interior does not acknowledge the leases' intrinsic value to the adjacent company but instead tries to calculate the value to "all" companies. Doing so for the three Colstrip tracts resulted in negative values of minus 20.3, 15.8, and 18.3 cents per ton, respectively. In valuing the leases, had Interior taken the position that the leases were of value only to the adjacent company likely to bid on them, its analyses would have yielded dramatically different results. According to the regional economic evaluation team, the making of this assumption would raise the estimated value of the tracts to 1.4, 0.2, and 63.7 cents per ton, respectively.

The remaining Montana tract--West Decker--involved a bypass situation. Though the bid was unreasonable, only 20 percent of the 2 cents per ton minimum value estimated by Interior's Office of Policy Analysis, the problem of how the Government should properly treat emergency bypass leasing situations is still unsolved. In the interim, the Government has few options other than settling for nominal bonus bids.⁴

The bid for the Fortin Draw tract--the only maintenance tract offered at the October sale--was only 20 percent of our revised estimate of market value and clearly unacceptable. Table 5-3 contains an analysis of the bids received for Wyoming and Montana maintenance tracts against our revised estimates of value calculated in appendix IV.

⁴Interior's Emergency Coal Leasing Program is the subject of a forthcoming GAO report to be published later this year.

Table 5-3
Reasonableness of Bids Analysis
for Powder River Maintenance Tracts

	GAO revised value (cents per ton)	Percent of revised value	GAO value (-----millions-----)	Actual bid value	GAO revised value (-----millions-----)	Difference
Wyoming Sector: April 28, 1982						
South Duck Nest Creek	10.8	2.5	23.0	15.4	3.6	11.8
Little Rawhide Creek	25.7	8.2	32.0	23.2	7.4	15.8
Montana Sector: April 28, 1982						
Colstrip A&B (note a)	N/A			N/A	.04	
Colstrip C (note a)	N/A			N/A	.02	
Colstrip D	3.4	.14	4.0	1.4	.1	1.3
West Decker (note b)	N/A			N/A	.02	
Wyoming Sector: October 15, 1982						
Fortin Draw	c/25.5	5.0	20.0	6.8	1.4	5.4

a/The economic evaluation team originally valued the Colstrip A & B and Colstrip C tracts at negative 20.3 and 15.8 cents per ton, respectively. Even after eliminating the team's 17.6 and 15.3 cents per ton adjustments for production rate differences, however, the estimated value of each tract remained negative--minus 2.7 and 0.5 cents per ton, respectively.

b/West Decker was a bypass tract. The economic evaluation team--without analysis--automatically values bypass tracts at the regulatory minimum price--then \$25 per acre.

c/Based on GAO's revised estimate of market value for the Little Rawhide Creek tract which Interior selected as the comparable tract for estimating the value of Fortin Draw's value.

Impact of changing demand on
maintenance tract value

In determining the reasonableness of bids for maintenance tracts, less consideration should be given to changes in demand for coal production. Instead, the demand for maintenance tracts might appropriately be seen as a function of the more stable or gradually increasing demand-for-reserves element of total coal demand. Because the demand for coal reserves stems from existing--more so than anticipated--coal supply contracts, it is more predictable and includes less speculation than demand for new coal production. Thus, the demand for such reserves is largely uncomplicated by the uncertainties associated with the demand for the new coal production.

As discussed earlier, because the demand for Wyoming coal is expected to increase at a rate of 3.5 to 4.0 percent per year through the end of the decade, coal companies will likely need to add to existing reserves to service current and known future coal supply contracts. It can be argued, therefore, that the demand for coal reserves is increasing annually and may have been greater in 1982 than in 1980. From this argument stems the view that maintenance tracts are not very sensitive to shifts in total coal demand; therefore, it is inappropriate to consider cyclical coal demand fluctuations in valuing maintenance leases.

Interior officials agreed that maintenance leases are--for the most part--free from the cyclical effects of coal demand shifts. Moreover, because none of the Interior officials or industry representatives we contacted could provide contradictory evidence, we believe that the value of Powder River Basin maintenance tracts was unaffected by the recent flattening of growth rates in the demand for coal production. Thus, in our view, the maintenance tracts offered at the April and October sales should not have been devalued as a consequence of changes in the demand for coal.

CHAPTER 6HOW REASONABLE ARE THECOMPETITION AND FAIR MARKET VALUEREQUIREMENTS OF CURRENT LEASING LAW?

Under the Mineral Lands Leasing Act of 1920, as amended by the Federal Coal Leasing Amendments Act of 1976 [30 U.S.C. 201(a)(1)], the Secretary of the Interior must award coal leases by competitive bidding (amended in 1978 to except the leases incident to certain right-of-way permits), but shall accept no bid which he determines is less than fair market value. The principles of competition and fair market value impose specific burdens on Interior and serve as the fundamental guidance for the Federal Coal Management Program. Unfortunately, they were adopted too late in the historical development of Federal coal to be applied rigidly in today's coal market. Legislation modifying the Federal Coal Leasing Amendments Act is needed to bring the leasing program in line with actual coal development patterns.

Under the present statutory framework, Interior's task is difficult at best. The present law assumes all coal lease tracts are competitive. It does not recognize that essentially noncompetitive maintenance-type tracts not only exist but are in many cases desirable. Thus, present law does not allow Interior to value and sell coal leases in a manner consistent with actual coal development patterns. As a result, the manner in which the Government leases coal does not correspond to the way industry is developing the resource. In our view, a legislative remedy is needed.

The Department should be given the authority to negotiate all but new production leases, which should continue to be sold competitively. In broadening Interior's authority, however, the Congress should establish strong controls ensuring adequate public participation and coal industry protection through consistent, fair, and equitable negotiations. The following section summarizes the basic features of the current Federal Coal Management Program. Afterward, issues leading to the need to modify the existing leasing system are discussed and strengths and weaknesses of various programmatic alternatives examined. Controls essential to the protection of public and industry interest are discussed as an integral part of our recommendation regarding the negotiation of maintenance leases.

SUMMARY OF THE FEDERAL COAL
MANAGEMENT PROGRAM

The objective of the Federal Coal Management Program is the issuance of coal leases through a two-stage process of land use planning and coal activity planning. (See fig. 6-1.) The first

Figure 6-1

**FACTORS INFLUENCING COMPETITIVENESS
OF REGIONAL COAL LEASE SALES****FEDERAL LEASING LAWS****FEDERAL COAL MANAGEMENT PROGRAM**

- LAND USE PLANNING
 - COAL DEVELOPMENT POTENTIAL
 - UNSUITABILITY CRITERIA
 - MULTIPLE USE TRADEOFFS
 - SURFACE OWNER CONSULTATION
- ACTIVITY PLANNING
 - INDUSTRY EXPRESSION OF INTEREST
 - TRACT DELINEATION, SITE SPECIFIC ANALYSES
 - TRACT RANKING AND SELECTION
 - REGIONAL EIS PUBLISHED



**LEASING GENERALLY CONFINED TO AREAS OF ONGOING OPERATIONS —
MORE MAINTENANCE TRACTS OFFERED THAN NEW PRODUCTION TRACTS**



**LESS
COMPETITION**



**LESS ASSURANCE OF
FAIR MARKET VALUE**

stage, land use planning, is conducted under authority of numerous Federal laws, the principal ones being the Federal Land Policy and Management Act and the Mineral Lands Leasing Act of 1920 as amended by the Federal Coal Leasing Amendments Act of 1976.

Land use planning is a critical element of the process because new leasing can only occur where planning has been completed and where leasing is compatible with the land use plan. Preparation of the land use plan is governed by Interior regulations. These regulations currently provide for resource management plans, the focal point of which are regional planning units. Emphasis is placed on screening out those areas not compatible with coal leasing or coal development. The regulations provide for four "screens" for the purpose of identifying areas acceptable for further consideration of leasing. (It is important to note that the character of potential lease tracts--new production or production maintenance--is not a factor taken into account in identifying areas acceptable for further consideration.) The four screens are:

- Identifying areas having coal development potential through Minerals Management Service and Bureau of Land Management analyses and submission of coal information from companies, States, and the general public.
- Applying 20 unsuitability criteria to screen out additional areas with key features or environmental problems that make them unsuitable for certain types of coal mining and therefore unsuitable for coal leasing.
- Conducting multiple use decisionmaking which may eliminate additional coal deposits as part of trade-offs to protect other resource values not included in the unsuitability criteria.
- Consulting with all qualified surface owners whose lands overlie Federal coal deposits to determine preference for or against surface mining.

In addition, before Interior adopts a comprehensive land use plan, it conducts a series of public participation opportunities, or hearings. It also consults with other Federal surface management agencies and with States and Indian tribes.

The activity planning stage follows preparation of comprehensive land use plans. Coal activity planning consists of identifying, ranking, analyzing, selecting, and scheduling lease tracts within areas covered by an approved land use plan. Activity planning begins with a call to industry for expressions of interest within areas acceptable for further consideration for leasing. Then individual tracts are delineated and site-specific analyses performed. Tract ranking and selection follows, as well as cumulative analysis of the impacts anticipated

from leasing and mining. These activities provide information for the required regional coal environmental impact statement. Lease sales are held following publication of the final impact statement, appropriate consultations and consents, and Departmental decisions on regional lease sale schedules. After the sale, a panel analyzes the bids for individual tracts and recommends whether they should be accepted as fair market value. Surface owner consent agreements are finalized and a Justice Department antitrust review completed.

DISPARITIES BETWEEN COAL
LEASING AND DEVELOPMENT

The manner in which the Government leases coal does not correspond to the way industry is developing the resource. Interior's program stems largely from requirements of the Federal Coal Leasing Amendments Act of 1976, which mandates competitive leasing and the receipt of fair market value. The market for Federal coal leases in the Powder River Basin and other western coal regions, however, is largely noncompetitive. Large energy companies are deeply entrenched in these basins, and especially in the Powder River Basin. Based on recent regional sales, they rarely compete--or can be expected to compete--against one another in bidding for a given Federal lease tract.

Since tracts are offered for sale based on expressions of interest, companies need only ask Interior to offer a specific property and the Department usually obliges. Conducting a "competitive lease sale" under these circumstances offers little assurance that the Government will receive a reasonable return for leased coal. Revealing the captive nature of most of the leases offered at the April 1982 Powder River sale, table 6-1 compares expressions of interest against the actual number of bidders. For the eight tracts receiving one bid, the bidder was a company that filed a presale expression of interest in the tract. Six of the eight bidders were the only companies that expressed interest before the sale.

Table 6-1

<u>Tract</u>	<u>Expressions of interest before sale</u>	<u>Number of bidders at sale</u>
Wyoming:		
*South Duck Nest Creek ¹	1	1
Keeline	7	2
*Little Rawhide Creek	1	1
Rocky Butte	3	1
Spring Draw	3	1
Montana:		
Coal Creek	2	2
*Colstrip A&B	1	1
*Colstrip C	1	1
*Colstrip D	1	1
Cook Mountain	1	1
*West Decker	1	2
*North Decker	2	0
*Spring Creek	1	0

*Maintenance tract.

Based upon our observation of recent coal lease sales in the Green River-Hams Fork and Powder River Basin regions, much of the Federal leasing effort is for maintenance leasing. Although Interior has no formal definition, it considers a maintenance tract to be one that is next to an ongoing mining operation, designed to extend production over the long term rather than increase annual production, and intentionally delineated to prevent future bypasses and shutdowns.¹ As a result, effective competition for the coal is precluded. During the coal program's activity planning stage, operators nominate the tracts in response to Interior's call for industry expressions of interest. No other operators would likely have an interest or be able to mine a maintenance tract because the costs to such a new operator would be much greater. For this reason, maintenance tracts are considered captive to the adjacent operation.

The preponderance of captive or maintenance leases, however, cannot be attributed solely to the process for nominating

¹This concept of maintenance leasing differs from the Emergency Coal Leasing Program definition, which means an amount of coal sufficient to allow the company to maintain current production levels until the next regional coal sale. Under the Emergency coal leasing program, Interior--not the mining operation--draws the tract boundaries.

and designating tracts. These processes are constrained by the other elements of land use and coal activity planning which must balance the interests of many groups against future mining production goals.

For example, because opening a new mining operation has what States generally perceive to be a distinct and potentially unfavorable socioeconomic impact, States may seek to expand existing operations rather than begin new ones. Under Interior's coal program, States and other advocacy groups exert significant influence over the location of future mining operations--thus over coal development patterns. They do so through their voice in the designation of areas in which the Federal Government may lease coal. Thus, in efforts aimed at minimizing coal production impacts, States and advocacy groups--by designating locations where coal is currently being mined--in effect push for Interior to delineate essentially captive tracts for sale instead of creating opportunities for new mining operations. In doing so, these groups help to restrict the various adverse impacts to areas already being influenced by mining operations--and other areas are reserved for other uses. Therefore, to the extent that States or other advocacy groups influence delineation of captive tracts, they create situations which do not foster competition for Federal leases but rather operate against it. As discussed in the section below, cyclical changes in the demand for coal production can also have a bearing on coal development patterns.

COAL DEVELOPMENT PATTERNS REFLECT DEMAND FOR COAL PRODUCTION

The demand for coal production--whether for the new production or reserve component--is another important factor affecting how, when, and where industry develops coal resources--which in turn affects competition for Federal coal leases and the receipt of fair market value. Market value varies substantially with cyclical changes in overall demand, but--more accurately--with changes in the demand for either component of coal production. During periods of substantial growth in the overall demand, the size of the new production component would be larger and market value of new production leases higher than when growth in overall demand is limited. According to industry representatives, during these latter periods, which include the early 1980s, the bulk of demand shifts to the acquisition of additional reserves needed to ensure existing production levels and thereby satisfy existing supply contracts. During such periods, demand for new production tracts falls sharply. However, demand for reserves--maintenance leases--is for the most part unaffected by cyclical changes and will increase annually at predictable rates because the coal is needed to satisfy existing supply contract obligations.

Delineation of tracts to be leased is strongly influenced by the demand for coal production. Based on assessments of the

amount and type of demand, the coal industry nominates specific tracts within coal fields selected by Interior for possible inclusion in forthcoming sales. Since coal companies' future prospects differ, the types of tracts they nominate differ as well. In essence, each company configures its tract nominations to match its demand projections. Under these circumstances, during periods of limited growth in demand, it is easy to see how certain tracts become "captive" to specific companies. In some cases, Interior goes so far as to name maintenance tracts after the adjacent operating mines of nominating companies.

At issue is whether captive tract delineation increases or decreases the market value of the tracts. Interior argues that captive tracts are worth less to the general public. An opposing view is that in these situations the company is a public of one, which has had a lease custom-fitted to its present and future operations; therefore, the value of the tract to that public of one is increased. In our view, when Government creates a situation providing an individual company with such an advantage over its potential competitors, it is entitled to compensation which reflects the value of the special treatment afforded the company. Under the present Federal coal leasing program, it is questionable whether the Government is being adequately compensated.

When the principles of competition and fair market value break down, so do assurances that Government and public interests are being adequately protected. The timing of lease offerings, location and size of leases offered, and the number of tracts offered are all critical factors affecting the size of the market for coal leases and, as such, affect the extent to which the market is open. At the Powder River coal sales, they operated in a manner which--in most instances--effectively closed down the market for most leases to only one company.

Closing down the market to such an extent does not allow the principles of competition and fair market value an opportunity to work as intended. On the other hand, it is difficult to argue that overlooking or discounting the land use or coal activity planning concerns which drive tract delineation is more acceptable than selling coal below fair market value. Also, delineating only new production tracts does not appear a plausible option because it would force operating inefficiencies on the mining industry and ignore changes in the demand for coal production.

The land use and coal activity planning processes are thought to result in the efficient and economical development of Federal coal reserves. Arguably, they pay appropriate attention to States' and public concerns. In our opinion, the processes must operate to incorporate many interests and should not be changed as a consequence of their adverse impact on delineation of competitive coal lease tracts. Instead, a change in the laws governing the manner in which coal is leased appears warranted.

The laws presently guiding the Federal coal leasing program require competition for Federal coal leases in a market which for many leases is noncompetitive and offers the Government little assurance of receiving fair market value. Thus, in attempting to comply with existing statutes, Interior faces two fundamentally undesirable outcomes: either risk selling coal at less than fair market value or risk leasing without adequate attention to land use or coal activity planning concerns.

According to the National Coal Association, in today's western coal market companies can be shown as competing against one another for supply contracts and western coal can be shown as competing against coal from other regions and against other energy fuels. Based on our analysis of the Powder River sales, however, front-end competition between companies for individual leases occurs infrequently. The institutional processes stemming from the land use and coal activity planning systems, coupled with decades of speculation and noncompetitive lease sales, have structured a market characterized by the deep entrenchment of large energy corporations. The major leaseholds in the current coal market have been acquired and there appear to be very few opportunities for new mining operations. In the current "soft" coal market, active competition for future Federal coal leases--maintenance or new production--cannot reasonably be expected.

ANALYSIS OF COAL LEASING OPTIONS

Considering the long-term nature of the western coal market structure, the advantages and disadvantages of various leasing options warrant examination. The following alternatives are analyzed:

- Developing a leasing system featuring alternative bidding procedures.
- Leasing maintenance tracts based on the value-in-use of the coal being offered.
- Negotiating captive leases but selling new production tracts competitively.

These options are generally recognized as having significant revenue-enhancing potential and have been given consideration in Interior policy analyses.

Instituting Alternative Bidding Procedures would Treat the Symptom, Not the Problem

Instituting alternative bidding procedures--royalty bidding, sliding scale, profit sharing, etc.--will not resolve disparities between the manner in which Federal coal is leased and developed. Most systems--like Interior's current one--presume

the existence of competition for Federal leases, but competition for Federal coal leases is limited in today's western coal market. However, two concepts--intertract bidding and descending value auction--have the potential advantage of increasing lease sale revenues. Legislative changes are not necessary for Interior to implement either concept. As discussed below, however, the disadvantages of both seem to outweigh their potential advantages.

The intertract bidding concept involves offering more than the targeted number of leases scheduled to be sold, then choosing the targeted number of leases from those receiving the highest bids on a cents-per-ton basis. The concept is thought to be applicable to both maintenance and new production situations.

The descending scale auction is an oral bidding procedure which initially offers prospective leases at the Government's high estimate of market value. Under this concept, the first bidder to match the Government's offering price is automatically the winning bidder. If no bids are received, the offering price is lowered in 10 percent increments until a bid is received or the lower estimate of value is reached. This system is thought to be usable only for new production situations.

Both systems have a number of disadvantages outweighing the potential revenue-enhancing advantages.

- The systems do not address market structure issues responsible for disparities between the manner in which Federal coal is being leased and developed. Instead, they seek to remedy the absence of competition. In effect, the concepts are aimed at treating the symptom instead of the problem.
- The systems are untested in Federal coal leasing; their potential for success is, therefore, uncertain.
- The systems do not appear applicable to large-scale leasing activities--each being predicated upon the unlikely presence of genuine competition.
- The systems--particularly intertract bidding--would place unnecessarily large information and analysis burdens on industry. Companies would not only have to calculate how high they can afford to bid for a given lease(s), but also how high their competitors could afford to bid for it and other leases. Not surprisingly, the coal industry does not support using the intertract bidding concept.
- The systems do not guarantee bidder participation and the intertract bidding system could result in emergency leasing situations for losing bidders needing additional reserves to maintain existing operations.

Collectively, the disadvantages of developing a new leasing system featuring alternative bidding procedures outweigh the single potential advantage of increased revenue. We believe legislative changes aligning the leasing and development of Federal coal are needed. Following are general discussions of two legislative options involving modification of statutory competition and/or fair market value requirements.

Leasing Based on Coal Value-in-Use Offers Some Improvement

Captive or maintenance tract leasing based on value-in-use analyses would not be competitive, but would probably yield increased revenues. The Federal Coal Leasing Amendments Act requirement of competitive bidding would have to be modified to permit this exception. New production tracts, however, would still be sold competitively.

Under value-in-use leasing, the value of leases captive to adjacent mining operations is determined through comparable sales and/or discounted cash flow analyses of the estimated cost and revenue flows of the adjacent operation. Although the approach is believed to offer revenue enhancing potential, there is no assurance that the company nominating the tract will bid for it. In addition, because this system of leasing results in preferential treatment for the company nominating the tract, Interior's tract delineation decisions would be subject to more intense scrutiny whenever a tract was adjacent to two or more mines.

Though not our preferred option, value-in-use leasing--in our view--would be an improvement over the current system. Negotiating captive leases, we believe, would be an even greater improvement.

Negotiating Captive Leases

Negotiating the sale of captive or maintenance-type lease tracts is, we believe, the best alternative because Interior could require mining companies to disclose mining cost and revenue data during the process. Instead of relying totally on its own estimates--as would be the case with value-in-use leasing--Interior could also have company data for its discounted cash flow analyses. To authorize the Secretary to negotiate a reasonable return for the leased coal, the competitive bidding and fair market value requirements of the Federal Coal Leasing Amendments Act would have to be modified. New production tracts, however, would still be sold competitively and receipt of fair market value required for them.

The principal advantage of negotiating captive or maintenance type leases is the fairness of the negotiating process to all parties concerned. Better mining cost and revenue data, for

example, will resolve many of the uncertainties presently troubling lease valuations and result in better information for leasing decisions. Conversely, authority to negotiate captive leases would appear to broaden further Interior's discretion in determining the reasonableness of prices paid for Federal coal. However, with better lease valuation data, the Department's latitude in these matters may actually decrease.

In amending current leasing law, the Congress should establish strong controls ensuring adequate public participation and coal industry protection through consistent, fair, and equitable negotiations. Following is a discussion of the controls we consider important to a successful program for negotiating captive leases.

STRONG CONTROLS--KEY TO SUCCESSFUL
LEASE NEGOTIATION PROGRAM

For the proposed negotiation of captive leases to be palatable, strong controls are needed to ensure adequate opportunities for public participation and to protect industry interest as well. Authorizing negotiation of captive leases, therefore, will place additional regulatory burdens on Interior. Procedures for handling applications for maintenance leases, for example, will have to be developed since future regional lease sales should--with few exceptions--include only new production leases. Once authorized to negotiate captive leases, Interior should publish for public comment proposed lease negotiation procedures. Following is a discussion of the controls we see as being essential to successful lease negotiation program. Table 6-2 outlines where the controls would fit into a hypothetical lease negotiation program.

Table 6-2Sequential Controls in a
Hypothetical Lease Negotiation Program

1. Application To Negotiate A Proposed Maintenance Lease
2. *Notice Of Intent To Negotiate Published For Public Comment
3. Public Comment Received
4. Decision To Negotiate or Sell Competitively At Regional Sale
5. *Notice of Decision And Evaluation Of Public Comments Published
6. *Negotiation
7. *Notice Of Results Of Negotiation And Lease Sale Terms Published For Public Comment
8. Public Comments Received
9. Decision To Sell Or Not Sell
- 10.*Notice Of Decision And Evaluation Of Public Comments Published

*Points where disclosure controls would operate in the public and/or industry interest.

The proposed controls operate to (1) ensure public and industry awareness of the Government's lease negotiation process, and (2) provide ample opportunity for affected parties to influence the process. Increasing the amount of information made public, we believe, will provide greater opportunities for informed intervention on behalf of parties which could potentially be affected by the lease. In addition, because the public record will provide consistent documentation of the negotiation process, periodic evaluation of the need for refinements to the process may be simplified. The controls we propose require greater internal documentation as well. However, we believe that company proprietary data must be properly safeguarded.

Upon receiving an application or request to negotiate a lease, under our proposal Interior would publish for public comment a notice of intent to negotiate a proposed maintenance lease. The notice should include the identity of the company involved, geographic and geologic data describing the lease desired, and other pertinent information. Through the notice, potential competitors would be given an opportunity to express interest in competing for the property at the next regional

sale. However, potential competitors would be required to (1) specify whether they are interested in the tract as described in the notice or as part of a larger new production tract and (2) present evidence substantiating their ability to efficiently mine the tract under the circumstances specified. The evidence requirement is intended to discourage insincere expressions of interest. After analyzing the comments, Interior should publish its decision whether or not to sell as specified in the proposed terms, the basis for any changes, and its evaluation of public comments.

In negotiating the lease, Interior should seek to obtain sufficient competent evidence documenting the lease sale terms. Detailed proprietary records of the negotiations, evidence presented by Government and industry, and its disposition should be kept. Once negotiated, Interior should publish the proposed lease terms for public comment on their reasonableness. After analyzing the comments, Interior should publish its decision whether or not to sell as specified in the proposed terms, the basis for any changes, and its evaluation of public comments.

The controls discussed above place substantial public disclosure requirements on Interior. We feel they are necessary, however, because the administrative burdens attending each control add measures of integrity to the proposed negotiation of maintenance leases. Moreover, because giving Interior the authority to negotiate maintenance leases could be seen as substantially expanding the Department's discretion over development of coal resources, strong controls are needed throughout the negotiation process to help ensure the balance of public, industry, and Government interests. Despite these measures, however, in our opinion administering a lease negotiation program overall should prove less costly and time consuming than conducting the current competitive lease sale program.

CHAPTER 7CONCLUSIONS AND RECOMMENDATIONS

On April 28, 1982, the Department of the Interior held the single largest coal sale in America's history. Though record receipts were realized, the sale was mired in controversy. Questions persist over the possibility of industry pressuring Interior to lower the coal selling prices. Interior's experimental entry level bidding system, introduced less than 2 months prior to the sale, reduced substantially the lease selling prices--including those for leases for which only one bidder could logically be expected. The system had not been previously tested in Federal coal leasing and its use was unsupported by economic analysis. Our analysis of sale results showed the system did not increase competition and revenues as envisioned.

Interior's criticisms of its regional office's original estimates of lease values, or minimum acceptable bids (MABs), for the sale--which was the basis for going to the new system--were not supported by economic analysis. None of Interior's reasons for discarding the original MABs as being too high could be sustained. Instead, we found the methodology used by the evaluation team to be generally reasonable and the resulting MABs to be conservative estimates of value. In fact, once revised to eliminate certain inappropriate adjustments and other improper reductions, the MABs proved to be significantly low. In the absence of competition at the sale and in light of weaknesses we found in the postsale fair market value determination procedures used by Interior, we believe the original MABs--with revisions as noted in this report--could and should have been used as the basis for gauging the reasonableness of the bids. Because this was not done, we estimate that Powder River coal leases sold at roughly \$100 million less than fair market value.

We believe much of Interior's trouble stems more from the leasing dilemma it faces than from its administrative practices. Under the Federal Coal Leasing Amendments Act, Interior is charged with a very difficult task: selling coal competitively in a market which--as a consequence of decades of noncompetitive leasing, speculation, and current land use and coal activity planning processes--is in many cases noncompetitive. Thus, certain fundamental disparities between the manner in which coal is being leased and developed must be rectified before Interior's task becomes one that is practicable.

Based on our evaluation, most leases sold in recent years at Federal regional coal sales appear captive to adjacent mining operations. In some cases, Interior even names the proposed lease tracts after the nearby mines. Interior recognizes that competition cannot be expected for these leases and in some cases even reduces its estimate of lease values because it believes captive tracts are not as valuable as those for which competition can be expected. In our view, continuing to offer captive leases under

the mantle of "competitive" leasing only creates the pretense of competition and provides little assurance that the Government will receive a reasonable return for leased coal. Legislative changes are necessary.

We believe the Mineral Lands Leasing Act of 1920, as amended by the Federal Coal Leasing Amendments Act of 1976, should be modified to allow the Department of the Interior to negotiate a reasonable return for captive or maintenance-type leases. A coal leasing program featuring negotiation of captive or maintenance-type tracts and competitive sales of new production-type tracts would help resolve the basic differences between the ways in which the resource is currently being leased and developed. However, strong controls requiring public disclosure of information throughout the lease negotiation process also are needed to safeguard against potential abuses of discretion and protect the interests of the public and industry as well.

RECOMMENDATIONS TO THE CONGRESS

We recommend that the Congress amend the Mineral Lands Leasing Act of 1920, as amended, to (1) authorize the Department of the Interior to negotiate captive or maintenance-type leases, and (2) require Interior to publish for public comment information derived at sequential phases in the lease negotiation process. To ensure public and industry awareness of the lease negotiation process, and to provide ample opportunity for affected parties to influence the process, the Interior should be required to publish its (1) intent to negotiate a proposed maintenance lease, (2) decision to negotiate the lease as proposed and its evaluation of public comments, (3) intent to sell the lease and the proposed sale terms, and (4) decision to sell the lease as proposed, or under modified terms, and its evaluation of public comments.

To facilitate future evaluations of the negotiation process, we recommend that the Congress amend the Mineral Lands Leasing Act of 1920 to require that detailed records be kept of the negotiations, including evidence presented by Government and industry representatives, and of its disposition.

RECOMMENDATIONS TO THE SECRETARY OF THE INTERIOR

Under the Federal Coal Leasing Amendments Act of 1976, which amended the Mineral Lands Leasing Act of 1920 (30 U.S.C. 201 (a) (1)), no bid which is less than the fair market value of the coal shall be accepted by the Secretary of the Interior. As we have previously indicated, however, bids in amounts substantially below fair market value were accepted and leases issued. The issue of whether Interior obtained fair market value for Powder River coal leases ultimately may be resolved in the courts. The U.S. District Court for the District of Montana currently has the Powder River coal fair market value question before it. During

the interim, however, the Secretary may wish to reconsider the reasonableness of the Department's methods and determinations--in light of our findings. If the Secretary determines that the evidence does not support a determination of fair market value, he should cancel the leases. This action would be consistent with the view of the United States Supreme Court that in a proper case the Secretary has the power to correct his own errors, by lease cancellation (Boesche v. Udall, 373 U.S. 472 (1963)).

We recommend that the Secretary of the Interior postpone scheduled regional coal lease sales until Interior has had an opportunity to correct deficiencies in its valuation, leasing, and fair market value determination procedures. This would help to ensure that (1) fair market value is received in exchange for competitively sold new-production type coal leases, and--if authorized by the Congress--that a reasonable return is received in exchange for negotiated sales of maintenance-type coal leases, and (2) Interior is able to act as a knowledgeable seller at both competitive and--if authorized--negotiated lease sales. Specifically, we recommend that the Secretary not resume coal leasing until Interior has developed

- a detailed analysis of the economic and geologic variables affecting the value of a Federal coal lease, including how changes in one variable affect others;
- new internal procedures for conducting coal lease valuations, including criteria for comparable sales analyses--refining the technique used to develop original minimum acceptable bids for the April 1982 Powder River sale,
- new guidelines for using untried or experimental bidding systems--such as entry level and intertract bidding--at regional coal lease sales, including limits on the percentage of the leasing target permitted under such experimentation;
- minimum regulatory selling prices for coal leases in each Federal coal region on a cents per ton basis; and
- revised fair market value determination procedures that include specific quantitative tests (1) applicable whether or not adequate bidding competition is present and (2) placing greater reliance on prior comparable sales and recent arm's length sales in the absence of bidding competition at the actual sale.

We also recommend that the Secretary direct the Bureau of Land Management to establish Bureau-wide, written internal procedures for safeguarding coal lease pricing, economic valuation, and other proprietary data.

[illegible]

APPENDIX I
STAFF DIRECTOR

STANLEY BOOYVILLE
ASSOCIATE STAFF DIRECTOR
AND COUNSEL
LEE MC ELFAIN
GENERAL COUNSEL
TIMOTHY W. GLIDEN
REPUBLICAN COUNSEL

Mr. Charles Bowsher
Comptroller General
U.S. General Accounting Office
441 G Street, N.W.
Washington, D.C. 20548

A recent report in Inside Energy indicated that prime tracts in the Powder River Basin coal-lease sale were devalued before the sale. According to the article, the Department of the Interior threw out the minimal acceptable bids after the unpublished figures were leaked to coal industry officials. On April 1, 1982, an "experimental" entry-level bidding system was introduced using totals, if the report is accurate, some forty million dollars less than the original minimum acceptable bids.

I would like you to investigate this matter to see if any laws or standards of conduct were violated. I also want to see the supporting documents the Department of the Interior used when it issued its decision to change bidding systems just before the largest lease-sale in history. There were no public comments on the decision. In addition, I want to know if, in the opinion of GAO, the public will receive fair market value for its coal in the Powder River Basin, as is required by the Federal Coal Leasing Amendments of 1976.

Because of the nature of the violations which may have occurred, I request that GAO launch an immediate investigation. For further information on this request, please contact Edward Abrahams on my Subcommittee staff at 225-2196.

Edward J. Markey
EDWARD J. MARKEY
Chairman
Subcommittee on Oversight
and Investigations

APPENDIX II
United States Senate

APPENDIX II

MAX BAUCUS
 Montana

June 23, 1982

Honorable Charles A. Bowsher
 Comptroller General of the United States
 441 G Street, NW
 Washington, DC 20548

Washington, D.C. 20510
 (202) 224-2651

Montana Toll Free No.
 (1) 800-332-6106

Dear Mr. Bowsher:

I write with further reference to my May 4, 1982 request for GAO assistance with regard to the Minerals Management Service and the Federal Energy Regulatory Commission.

First, I appreciate your work to date in the briefing given to my staff by GAO personnel earlier this month. In accordance with the informal discussions at that meeting, I would like to amend and expand my request as follows:

First, I would appreciate your completing as quickly as possible the investigation into the particular alleged improper activities concerning the tight sands gas formation applications in Montana. The Montana Public Service Commission has requested the Federal Energy Regulatory Commission not to make final determination concerning these applications until your review of improprieties is completed. Therefore, please sever this part of my May 4 request from the more general parts of my request as necessary to complete this investigation as speedily as possible.

Committees
 Environment and
 Public Works
 Finance
 Judiciary
 Small Business

Second, it is my understanding that Congressman Markey, as Chairman of the Oversight and Investigations Subcommittee of the House Interior and Insular Affairs Committee, has instigated a GAO inquiry into Minerals Management Service activities relating to recent Western coal leases. This investigation would appear to be relevant to the questions I asked in my May 4 letter concerning procedures for handling MMS proceedings. Accordingly, in order to avoid duplication, I would like to join with Congressman Markey as a co-requestor of this investigation and ask that the concerns addressed in my May 4 letter be addressed in this report.

Finally, from the helpful, informal briefing given by your staff earlier this month, I have become concerned that the Federal Energy Regulatory Commission may be either exceeding its authority or not carefully implementing its authority concerning the designation of tight sands gas formations. Therefore, I would appreciate your separately answering the following questions:

Billings
 657-6790
 Bozeman
 586-6104

1. Has the Federal Energy Regulatory Commission developed adequate criteria on which to judge individual tight gas formation applications?

Butte
 782-8700
 Great Falls
 761-1574

GAO note: The May 4, 1982, request letter pertains to a separate matter, and is not reproduced here. The Senator's specific Powder River Sale request appears in paragraph four above.

Helena
 449-5480
 Missoula
 728-2043

APPENDIX II

APPENDIX II

Page Two

HONORABLE CHARLES A. BOWSHER
June 23, 1982

2. Is the apparent "fast track" approach being taken by FERC adequate to make sure that these designations are accurate and that no designations are being made without sufficient basis to establish the need for higher prices to promote gas development?

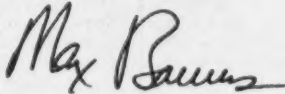
3. Does the price set by FERC for gas coming from these areas reflect the Congressional intent behind FERC's authority? Is the price being set adequate to produce production from these areas but no higher than necessary?

4. Are the Federal Register and other public notice processes of FERC adequate to give all interested parties a fair and reasonable chance to affect decisions? I am particularly concerned that "fast track" notice policy may have led to little or no notice being given on many FERC regulatory actions, and I would like to see GAO's assessment of the FERC public notice process.

Thank you for your further assistance.

With best personal regards, I am

Sincerely,



cc: Honorable Edward J. Markey

APPENDIX III

APPENDIX III

Analysis of Actual Selling Price Versus
\$0.01 and \$0.02 Per Ton Selling Price For
Powder River Tracts Offered at \$25 Per Acre

Tracts	Actual selling price	Selling price at \$0.01/ton	Factor of actual selling price	Selling price at \$0.02/ton	Factor of actual selling price
<u>Wyoming</u>					
Keeline (note a)	\$1,619,000	\$1,700,000	1	\$3,400,000	2
Kintz Creek (note b)	80,000	1,930,000	24	3,860,000	48
Timber Creek (note b)	91,725	1,640,000	18	3,280,000	36
<u>Montana</u>					
Coal Creek (note c)	25,825	600,000	23	1,200,000	46
Colstrip A&B	40,825	585,000	14	1,170,000	28
Colstrip C	22,325	189,000	8	378,000	16
Colstrip D	56,250	415,000	7	830,000	14
West Decker (note d)	1,000	50,000	0	100,000	100
Totals	\$1,936,950	\$7,109,000	3.7	\$14,218,000	7.3

a/With two bidders, Keeline sold at \$500 per acre, 20 times the \$25 per acre offering price.

b/No bids received; value equals price at \$25 per tract acre.

c/With two bidders, Coal Creek sold at \$340 per acre, over 13 times the \$25 per acre offering price.

d/With two bidders, West Decker sold at \$500 per acre, 20 times the \$25 per acre offering price.

REVISIONS TO THE REGIONAL
ECONOMIC EVALUATION TEAM'S
COMPARABLE SALES ANALYSES

The regional team's basic methods were sound; however, as noted in chapters 4 and 5 of the report, some improvements are needed. The process for making the needed revisions requires that questionable adjustments be eliminated in the order in which they were originally made in the regional coal team's analysis. Unless needed revisions are made in the proper sequence, they will not accurately reflect each questionable adjustment's impact on tract value. For this reason, adding together the values included in tables 4-1, 4-2, and 4-3, for example, will not accurately reflect the amount by which leases sold in April were undervalued. Our methods for revising the team's estimates of value for lease tracts sold at the April and October sales--confirmed with the regional team--are discussed individually below. Afterward come our detailed calculations.

REVISING THE VALUES
OF THE APRIL LEASES

For the April sale, the revisions include

- eliminating the speculative production rate adjustment,
- making the small business tax effect adjustment only for the Coal Creek small business set aside tract, and
- omitting tract value reductions made as a consequence to Interior's previous policy of cutting the value of some small tracts in half.

In its comparable sales analysis, the evaluation team made a series of adjustments for physical and geologic lease characteristics. Included among them were adjustments for factors such as Btu content (heat value), reclamation and surface purchase cost, stripping ratio, and production rate. Beginning with the cents per ton value of the comparable tract--Dry Fork--the team made adjustments for each of the factors and arrived at a subtotal. Based on this subtotal, a small business tax effect adjustment was calculated--resulting in a second subtotal. Based on this subtotal, a bonus payment plan adjustment was made to recognize that bids for the leases being offered would be paid in five equal payments 1 year apart rather than in a lump sum payment as was the case for the comparable tract. The value of some small tracts was then split in half in deference to a previous Interior valuation policy.

APPENDIX IV

APPENDIX IV

Revising the team's methods to eliminate the effects of the questionable features we identified involves only a few simple calculations. First, the production rate adjustment is subtracted from the team's initial subtotal. Next, a small business tax effect adjustment is recalculated for the Coal Creek set aside tract based on its new subtotal, but not for the other tracts for which small business participation was neither anticipated nor observed. Last, the bonus payment plan adjustment is recalculated based on the new subtotal. No calculation is needed to eliminate the effect of the questionable policy--the reductions are simply omitted from our analysis.

In the schedule for revising the estimated value of the leases offered in April, we compare our revised values against the (1) minimum acceptable bids calculated by the regional evaluation team, (2) entry level bids developed by Interior, and (3) actual bids at the sale. Based on our analysis against these three sets of bids, the leases receiving bids at the April sale were undervalued by \$95.1 million, underpriced by \$112.9 million, and sold for \$80.7 million less than what we estimated they were worth. (The \$110.6 million shown in the analysis includes \$29.9 million for the Rocky Butte bid rejected by Interior. Subtracting this amount from the \$110.6 million results in the \$80.7 million.)

REVISING THE VALUES OF
THE OCTOBER SALE LEASES

For the October sale at which only two tracts--Rocky Butte and Fortin Draw--were offered, the revisions include

- using our revised values instead of actual bids received for April sale tracts as the starting point (comparable tract value) for the analysis,
- eliminating the production rate adjustment from the analysis of the Rocky Butte tract, and
- omitting the small business tax effect adjustment from each tract's analysis.

The evaluation team's analysis of the October sale leases was basically the same as that for the April leases, except that tracts sold at the April sale were used by Interior as the comparable tracts to those being offered in October. Similarly, revising the estimates of value for the October leases involves calculations which are mathematically simple to perform.

First, because the selling prices of the April leases do not--in our opinion--represent fair market value, they are not

APPENDIX IV

APPENDIX IV

suitable comparable tract values and should not have been included in Interior's analysis. Substituting our revised estimates of value for their actual selling prices solves the problem. As in the April sale, the effects of the production rate adjustment are eliminated by a simple subtraction. Since neither Rocky Butte nor Fortin Draw tract is of known interest to small businesses, the small business tax effect adjustment is not appropriate, so we omitted it from the team's analyses. Last, since the April and October leases sold under the same payment arrangements--five equal payments 1 year apart--a bonus payment plan adjustment was not necessary.

Calculation of GAO's Revised Estimates of Value
for Powder River Basin Coal Leases Offered for Sale
on April 28, 1982

Tracts by State	Economic Evaluation Team estimates a/ (Dents/ton)	Production rate adjusted (Dents/ton)	Bonus payments plan adjusted b/ (Dents/ton)	Subtotal (Dents/ton)	GAO revised estimate of tract value (\$Millions)	Comparison of GAO's revised estimates against			
						Minimum acceptable bids		Bid entry level bids	
						(Dents/ton)	(Dents/ton)	(Dents/ton)	(Dents/ton)
						Difference (\$Millions)	Difference (\$Millions)	Difference (\$Millions)	Difference (\$Millions)
Wyoming									
South Duck Nest Creek	+ 6.9	+ 2.1	+ 9.0	+ 1.8	+10.8	15.4	2.5	+ 8.3	+11.8
Reefline	- 2.7	+13.2	+10.5	+ 2.2	+12.6	21.5	0.05	+12.6	+21.4
Little Redside Creek	+24.1	- 2.7	+21.4	+ 4.4	+25.8	23.2	13.4	+12.4	+11.1
Rocky Butte	+ 7.5	+ 0.1	+ 7.6	+ 1.6	+ 9.2	41.0	6.0	+ 3.2	+14.2
Spring Draw	+ 9.5 c/	+ 4.4	+13.9	+ 2.8	+16.7	54.0	8.5	+ 8.2	+26.6
Montana					Subtotal:	\$155.2			
Coal Creek	- 1.2	+15.3	+12.0 d/	+ 2.4	+14.4	9.6	0.04	+14.4	+ 8.6
Colstrip A & B	-20.3	+17.6	- 2.7 e/	N/A	N/A	N/A	0.07	- 0.07	- 0.04
Colstrip C	-15.8	+15.3	- 1.5 f/	N/A	N/A	N/A	0.12	- 0.12	- 0.02
Colstrip D	-18.3	+21.1	+ 2.8	+ 0.6	+ 3.4	1.4	0.14	+ 3.2	+ 1.3
Cook Mountain	- 7.3	+ 2.5	- 4.8 g/	N/A	N/A	N/A	0.03	- 0.03	- 0.05
West Decoder		N/A	N/A	N/A	N/A	N/A	0.02	- 0.02	- 0.001
					Subtotal:	10.0			
							9.9		5.5
									\$112.9
									9/310.6

a/From reports dated March 10 and 26, 1982, estimates reflect tract value after adjusting for differences in physical (geological) tract characteristics.

b/Adjusts for difference in time value of money between a single payment and five annual payments of bonus bids.

c/Corrected value after eliminating resource data errors—provided by Casper Economic Evaluation Team.

d/Subtotal of 14.1 reduced by 2.1 to consider tax effect on small businesses—data provided by Casper Economic Evaluation Team.

e/Tract values remained negative, even after eliminating production rate adjustments. A zero tract value was assumed.

f/West Decoder was a bypass tract. Both its Minimum Acceptable Bid and Entry Level Bid were met at the regulatory minimum—then \$25 acre.

g/Difference for Apr./Oct. combined is \$100.5 million, derived by subtracting Apr. Rocky Butte bid difference (\$29.9 million) from \$110.6 million, and then adding \$14.4 million and \$5.4 million differences for two tracts sold in Oct. (See p. 88).

Calculation of GAO's Revised Estimates of Value
for Powder River Basin Coal Leases Offered for Sale
on October 15, 1982

Wyoming tracts	April Sale Comparable Tract(s) ^{a/}	GAO estimated value of April tracts (\$ per ton)	Appropriate adjustments ^{b/} (\$ per ton)	GAO revised estimate of tract value (\$ per ton)	Average of Reeline and Spring Draw (\$ per ton)	Regional Team's estimate of tract value (\$ per ton)	Difference	
							(\$ per ton)	(\$ millions)
Rocky Butte	Reeline	12.65	4.85	7.8	8.25	4.04	4.21	\$18.7
	Spring Draw	16.74	8.03	8.7		4.76	20.8	\$5.5
Fortin Draw	Little Ramhide Creek	25.77		25.6				
							5.02	3.23
							5.08	20.47
								c/\$14.4
								c/\$5.4

^{a/}Comparable tracts chosen by Interior

^{b/}Includes adjustments for Btu content (heat value), Reclamation and Surface purchase costs, and stripping ratios.

^{c/}See footnote g, p. 87.

PUBLIC AND INTERNAL COMMENTS ON
NEW MINERALS MANAGEMENT SERVICE
COAL LEASE SALE PROCEDURES

To implement sections 3422.1-.4 of the new Federal Coal Management Program regulations of July 30, 1982, the Minerals Management Service established new coal lease sale and fair market value determination procedures. On September 13, 1982, the Service published these procedures in the Federal Register and requested public comment on them. Sixteen responses were received, 12 from 11 energy companies, 2 from industry associations, and 2 from public interest groups. The Service also received 10 internal responses from offices or individuals.

PUBLIC COMMENTS

Respondents generally criticized both (1) vague, unclear terminology and methodology in the procedures, and (2) the overall leasing approach embodied in the procedures and the new coal regulations. Nine of 11 coal or energy companies generally disliked the procedures, for different reasons. Only one company did not criticize the procedures (Shell). Two industry associations submitted comments recommending major changes in the procedures and the coal regulations. Neither responding public interest group believed that the postsale bid evaluation procedures would assure receipt of fair market value.

Energy company comments were wide ranging. Four companies considered the procedures to be unwise interference in the marketplace (Gulf, Western Energy, Getty, Consol). Four had concerns about changed regulations relating to \$100 per acre bid minimums and sealed-only bidding (North American Coal Co., Gulf, Western Energy, Colowyo). Three found details of the procedures confusing and unclear. Gulf pointed to "too many undefined terms" with "no boundaries"; Tenneco found presale procedures for establishing a minimum bid "unclear, confusing, and * * * not detailed enough or related in any way to the marketplace"; Meridian Coal found it "unclear now MMS's methodology for arriving at a minimum bid which would be a 'best estimate of the representative market value' will differ from the methodology for the postsale comparability analysis," and also found it unclear now the Service would decide on postsale bid acceptance or rejection. Five companies suggested that the Service return to published presale minimum acceptable bids (Gulf, Tenneco, Sunbelt Wing, Consol, and Coastal States Energy). Four of them believed the procedures as written did not adequately distinguish between captive and competitive tracts or recognize that many Federal tracts offered would logically attract only one bidder (Tenneco, Sunbelt, Meridian, Coastal States).

Comments from the two responding industry associations were very similar. Both praised the Service's efforts to provide procedures, but they objected to sealed bidding as being more like a

APPENDIX V

APPENDIX V

lottery than a competitive sale and criticized the \$100 per acre regulatory minimum as being too restrictive. Both generally favored postsale fair market value determination, but one felt that "special circumstances" should be included in both presale and postsale analysis. Both found that the procedures needed clarification at many points.

Both responding public interest groups found the procedures untenable. One found a return to oral bidding and minimum acceptable bids as a more certain way of assuring that fair market value is received; the other charged that (1) the Department of the Interior promulgated the procedures without complying with statutory obligations and that (2) the procedures did not guarantee independent resource evaluation, thereby raising doubts about the seller's knowledgeability.

INTERNAL SERVICE COMMENTS

Service-employed respondents were those expected to be using the procedures in the future. Ten comment letters from nine different offices were submitted. One respondent found the procedures "well conceived." Two others generally supported the new approach, with minor clarifications. Another had no comments, and two others wrote brief and noncommittal letters. The remaining four respondents raised serious criticisms related to unclear terminology and methodology. The North Central Regional Office recommended building potential dollar loss from bid rejection into element 2 of postsale competition analysis instead of including it under "special circumstances," which are difficult to quantify. The South Central Regional Office was highly critical--it found the differences between minimum bids and minimum acceptable bids (representing fair market value) to be unclear; it found methodology unclear for calculating bids other than \$100 per acre; and it found most of the postsale evaluation section "incomprehensible." The Eastern Regional Office's Acting Chief, Economic Evaluation Section, criticized the elimination of oral bidding, which had a good "track record"; he added that minimum bids could be confused with minimum acceptable bids; and that "special circumstances" could be abused; he further stated that the new procedures appeared to emphasize an "obligation to sell" rather than a knowledgeable buyer's "willingness, but no obligations to sell."

STATUS OF LAWSUITS RELATED
TO THE POWDER RIVER SALE

Two separate actions were instituted against the Department of the Interior in the United States District Court for the District of Columbia. The first case was filed by the Northern Cheyenne tribe on April 21, 1982 (Civil Action No. 82-1094). It charged that the Powder River sale would violate various Federal laws including the National Environmental Policy Act and the Mineral Lands Leasing Act, as amended. The main issue was the alleged failure by Interior to consider the impacts of the sale on the Tribe. The action sought to prevent the sale or, if it were held, to have the leases issued pursuant to the sale held to create no rights to mine the coal. A motion for a temporary restraining order to prevent the sale was denied.

The principal plaintiff in the second case is the National Wildlife Federation (Civil Action No. 82-1166, filed April 27, 1982). Additional plaintiffs are the Northern Plains Resource Council, the Montana Wildlife Federation, and the Powder River Basin Resource Council. The suit sought to enjoin the Powder River sale as well as declare that various provisions of Federal law were violated incident to the sale. It is alleged that the high bids made for the Little Rawhide, Spring Draw, Rocky Butte, Duck Nest Creek, Colstrip A and B, Colstrip C, Colstrip D, and Cook Mountain tracts in the Powder River Coal Basin did not constitute fair market value. Therefore, acceptance of the bids by the Secretary of the Interior would violate the Mineral Lands Leasing Act as amended by the Federal Coal Leasing Amendments Act of 1976. At their request, the Shell Oil Company, the State of Wyoming, and Meadowlark Farms, Inc., were added as defendants in the National Wildlife case.

By court order of June 7, 1982, the cases, which had previously been consolidated for trial, were transferred to the United States District Court for the District of Montana. (The Northern Cheyenne Tribe v. James G. Watt, Secretary of the Interior, et al., Civil No. 82-116-BLG, and National Wildlife Federation, et al., v. Robert Burford, et al., Civil No. 82-117-BLG.)

Plaintiffs in both cases have moved for summary judgment which would result in judgments in their favor--without the necessity for trial. The defendants, in turn, have also moved for summary judgments which, if granted, would cause the dismissal of the actions prior to trial. The Court has reserved decision on the motions.

APPENDIX VII

APPENDIX VII

GLOSSARY

Adjustments to
comparable sales

Additions to or subtractions from the value of a previously sold "comparable" lease, in order to account for differences between the sold lease and the one being offered

Assignment market

A coal market in which various coal holdings are bought and sold by private companies

Bidding system

A set of procedures by which competitive bidding is conducted

Bituminous coal

An intermediate-rank coal with low to high fixed carbon, intermediate to high heat content, a high percentage of volatile matter, and a low percentage of moisture

Bonus bid

The cash amount, beyond royalties or rentals, offered by a bidder as consideration for receiving a lease

Boxcut

The first excavation at a surface coal mine

British thermal
unit (Btu)

The amount of energy necessary to raise the temperature of one pound of water by one degree

Bypass tract

A tract next to an ongoing operation which can be economically mined around if no lease is awarded

Captive tract

A maintenance, bypass, or other tract for which not more than one coal company could reasonably be expected to compete

Cash bonus bid, fixed
royalty bidding system

A set of bidding procedures under which a lessee pays the Federal lessor a cash bonus bid at the time of the sale, and generally a royalty of 12 1/2 percent and 8 percent for surface and underground mining, respectively, during the productive life of the lease

APPENDIX VII

APPENDIX VII

Coal activity planning	Specific planning for an upcoming regional coal lease sale, including tract selection, publication of a regional environmental impact statement, and final sale scheduling
Comparable sales analysis	A method of valuing coal tracts by comparing them to the price and physical and other characteristics of a previously sold tract
Competitive coal leasing	A leasing system involving land use planning, environmental impact statements, and competitive bidding procedures, to ensure that Federal coal is leased at its fair market value and developed in coordination with State, local, and private interests
Demand for production/ reserves	Demand for produced coal, versus demand for lease holdings to service existing production contracts
Discounted cash flow analysis	Use of an econometric model to calculate reserve estimates, product prices, and production costs over the life of a mine, with annual cash flows discounted to present value
Emergency leasing	Within the competitive leasing system, an application process through which Interior may consider holding a lease sale apart from the competitive leasing process when a mining operation adjacent to unleased coal deposits demonstrates an emergency need for them
Entry level bidding system	An experimental procedure involving both sealed and oral bidding under which "floor" bids are set well below the presale estimates of tracts' value, in expectation that bidding competition at the sale itself will establish the tracts' true value
Environmental impact statement	An assessment of environmental impacts related to various levels of coal development in a given coal region, as part of the competitive leasing system

APPENDIX VII

APPENDIX VII

Expression of interest	Under the competitive leasing system, a written reply to a formal call for industry expressions of interest in leasing coal within an area defined by the land use planning process
Extracted price	The price of coal at the mine mouth
Fair market value	The probable sale price of a coal lease, assuming that both buyer and seller are knowledgeable and willing participants in the transaction
Fair market value determination	The process by which Interior estimates the value of a coal lease and/or assesses whether a given high bid offered for the lease is adequate
Fee coal	Privately owned coal
Floor bid	A minimum price set by the seller, at or above which the bidding for a lease may begin
In-place value	The inherent value of the coal in the ground
Intertract bidding	A procedure under which more leases are offered than sold--and those sold go to the highest bidder
Land use planning	Within the competitive leasing system, the process of identifying areas of high development potential and suitability, prior to coal activity planning
Lease	A Federal coal lease issued under the provisions of the minerals leasing laws, granting exclusive extraction rights
Lease valuation	The process of calculating the value of a coal lease
Lessor/Lessee	The seller/buyer of a lease
Logical mining unit	The amount of land needed for efficient, economical, and orderly mining production

APPENDIX VII

APPENDIX VII

Long-term contract price	The long-term price negotiated between a coal producer and consumer, often a utility
Minimum acceptable bid (MAB)	A presale estimate of a coal tract's value, representing both the "floor" at or above which bidding may begin and Interior's official estimate of fair market value
Minimum acceptable bidding system	A sealed and oral bidding procedure under which lease valuations representing fair market value are calculated before a sale, and used both as "floor" bids and as standards for judging whether actual bids at the sale are adequate
Minimum bidding system	A single sealed bidding procedure under which (1) leases are offered at either the regulatory minimum of \$100 per acre (new production tracts) or at Interior's best estimate of fair market value (maintenance tracts) and (2) bidders are expected to offer their one best bid for a tract.
Minimum regulatory bid	A floor bid established by regulation
Negative tract value	A hypothetical minus value resulting from computations involving the discounted cash flow econometric model
Negotiated leasing	A process whereby production maintenance leases would be offered to a coal company by means of negotiation between the company and the Department of the Interior
New production tract	A competitive coal tract that can be economically mined by itself
Oral bidding	Under coal program bidding procedures, an oral auction following sealed bidding
Postsale fair market value determination	Determination of value after a sale, based in part on sale results

APPENDIX VII

APPENDIX VII

Presale estimate of value	A calculation of the fair market value of a lease before it is offered for sale
Production maintenance tract	A coal tract designated to be a logical extension of the operations of an adjacent mine, suitable for maintaining its present production
Proprietary coal data	Sensitive data related to the amount, quality, or fair market value of coal resources, not intended for public disclosure
Rental	A fixed annual fee paid to the Government for the right to a lease
Reserves (coal)	Portion of coal resources in the ground that can be economically extracted at current prices (costs) using current technology
Royalty	Proceeds paid to the Government by a coal producer for the right to develop a Federal coal lease, based on a percentage of the value of the coal or amount of coal produced
Single sealed bidding	A procedure under which bidders submit one sealed bid, without subsequent oral bidding
Small business set-aside tract	A tract offered at a regional sale for which competition is restricted to bidders who qualify as small businesses as determined by the Small Business Administration
Stripping ratio	Cubic yards of overburden per ton of coal recovered
Subbituminous coal	A low-rank coal with low fixed carbon and high percentages of volatile matter and moisture
Surface mining	Above-ground extraction, suitable to depths of about 200 feet
Surface owner consent	Written consent from an owner of the surface land above a coal tract, required before a lease can be finally issued

APPENDIX VII

APPENDIX VII

Tract selection,
delineation

A part of Interior's coal activity planning process in which Interior field staff identify appropriate coal tracts for an upcoming regional sale

Underground mining

Below-ground coal extraction

Value-in-use leasing

Leasing of captive tracts based on resource valuations which use comparable sales or discounted cash flow analysis of the adjacent operation

(008513)

Senator WARNER. Thank you very much.

It is the Chair's desire first to allow an opportunity to those members that came in to make any opening statements, and then to proceed to a question period of 5 minutes each for members, thereby allowing the most equitable opportunity for all present.

Mr. Melcher, did you have an opening statement?

**STATEMENT OF HON. JOHN MELCHER, A U.S. SENATOR FROM
THE STATE OF MONTANA**

Senator MELCHER. Well, I only want to say that regardless of what the law is, and the deficiency in the law has been noted, the fact is there wasn't much of a market for coal.

The fact is that these sales were held at a time when the market was very much down. It is almost assured that the value of the coal that is paid at these sales is not going to be up to what it would be if there were a normal market or a better market.

I think it would be most helpful to go over this issue. This committee pointed out, in the hearing on February 22 in Billings, that due to questions regarding the market for the coal, it would be wise for the Secretary to either postpone the entire sale or to look very carefully at each tract that was being offered and cut it in two and go with the maintenance production tracts which had to be let. Those sales had to go forward if people were going to keep mining—they were mining then.

I think the basic question is, how do you make the Secretary of the Interior recognize what the real world is? When there isn't a market, don't be forcing more coal onto a market that is already stuck to the gills, and can't absorb any more coal. I think that is the basic error, and I think that Secretary Watt would be well advised to follow what we found in that subcommittee hearing in February 1982 and trim his sales. Keep them to market conditions rather than moving forward.

Senator WARNER. Mr. Domenici.

Senator DOMENICI. No statement, thank you.

Senator WARNER. I will proceed for 5 minutes. If the clerk will take the time, please.

I am concerned about the questions of leaks here, and how they may bear on the recommendations taken by this committee.

What evidence do you have that there was an unauthorized disclosure of proprietary data regarding the April 28, 1982, Powder River sale?

Mr. PEACH. The major evidence that we examined was, I believe, a March 26 memorandum written by one of the people from within the region to Interior headquarters indicating that they did believe that a leak of information had taken place.

Now we interviewed that individual and others with respect to their rationale for believing that that leak had taken place, and the preparation of that memorandum. Their feelings were based on contacts that they had had from certain industry people, who they felt had confidential information.

They did not want to reveal to us exactly who the people were. And there is some limit to how far GAO can go in compelling investigations which may move ultimately over into criminal kinds

of areas. So we took the information that we had, and furnished it to the Inspector General's office, which is what we feel that Interior should have done when the allegation was originally raised, so that it was properly investigated.

The Interior Inspector General has carried out an investigation, and has provided a report based on interviewing all of the field personnel, plus getting the names of the industry people that they talked to, and then interviewing them in addition.

Basically, it is concluded that there was not any privileged information that the industry had in their possession. There was some misunderstanding and some miscommunication on the part of those field people as to what they thought that those industry people were telling them, and what kind of information they had.

They now believe that it was information that was otherwise of a public nature. And I have no reason to dispute that.

Senator WARNER. You have no rebuttal to that finding?

Mr. PEACH. No, we have no rebuttal to that finding. And we feel that the Inspector General was the appropriate person to go in and carry out that more complete investigation.

I suppose that the other thing that we would say that we did find was that we do know that the information was not appropriately safeguarded during a certain period, which may account for a lot of the miscommunication that occurred. When the information was passed at the field level, it went from one bureau to the other, and appropriate safeguards were not applied to it as required by Department regulations.

Senator WARNER. Do you find any evidence that the April 28, 1982, sale was compromised in any way by this leak then?

Mr. PEACH. We could find no evidence of that. The biggest concern would have been that, because Interior information was leaked early on, the original MAB's, that industry could have been involved in lobbying Interior officials to change their bidding method to this entry level system that they went to, which also substantially lowered the bids that they would be asking for on a number of the tracts.

And that was the largest concern. We found no evidence that such lobbying had occurred, though.

Senator WARNER. Now you mentioned in your statement a case in the Supreme Court, *Boesche v. Udall*, as precedent for the Secretary having the power to correct his own errors through lease cancellation.

Could you outline for the committee the basic facts of that case and the rationale, and how it might or might not work a hardship on those who receive the leases?

Mr. PEACH. Well, first, let me give you just a general answer, and I have Mr. Stan Feinstein from our Office of the General Counsel with me today, who perhaps can elaborate a little further.

It was our view—when we looked at the additional information that we had to provide to the Secretary, and we also determined that certain errors had taken place in calculations, and that there were other adjustments that we felt should have been considered if they had looked at this model a little bit more carefully, and how the numbers and information was being used—that they should

take that into consideration as to whether the leases had been appropriately awarded.

And we felt that if they believed that errors had occurred of a certain magnitude, that they were within their rights to cancel the leases.

I will ask Mr. Feinstein if he would elaborate a little bit more on the nature of that.

Mr. FEINSTEIN. That is the case that the Supreme Court used to reconfirm and establish the precedent. In that case the Department of the Interior had stated that they had the authority to cancel the lease for reasons preexisting the granting of the lease.

In other words, the Secretary was saying that he had the authority inherently under the powers that he has to manage public resources to cancel that lease administratively. That was the allegation by the Secretary of the Interior, and that was upheld in that case. That particular case had to do with an oil and gas lease in which there had been errors prior to the granting of the lease, in which the company which was granted the lease had no part.

In other words, they had no complicity, and they were there in good faith. However, the Supreme Court did hold that in those cases where the lease granting was contra to a specific requirement of the law, that the Secretary did have the authority to cancel that lease for those preexisting reasons.

The distinction was made as against those cases where there are reasons that have occurred subsequent to a grant of the lease, in which case there was a provision for a judicial proceeding.

This particular case, rather than establishing a new point of law, reconfirmed the court's understanding about the inherent power of the Secretary of the Interior to, in their language, I believe, correct his own errors.

This has been subsequently referred to in several other cases involving the Secretary. And as I understand it, it continues to be the view of the courts, that the Secretary may correct his own errors in a proper case.

Senator WARNER. My time is up, and I will proceed in the order of the arrival of the Senators. Mr. Wallop.

Senator BUMPERS. Malcolm, would you yield?

Senator WALLOP. Sure.

Senator BUMPERS. What is the name of the Supreme Court decision that you are referring to?

Mr. FEINSTEIN. It is *Boesche v. Udall*.

Senator BUMPERS. That goes right to the heart of those Texas Oil & Gas leases that we have hearings on here a number of times. The Secretary canceled leases down at Fort Chaffee, Ark. I just hope your view on that decision is upheld in that case.

Mr. FEINSTEIN. Well, the same view that I referred to has been referred to favorably in several additional cases as well. But I do think that it is important that the distinction be made that this is for prelease conditions going to statutory requirements which were not observed. And, also, that this does not involve questions of a State of a change of secretarial policy, but rather was a specific statutory condition.

Senator BUMPERS. Well, does that case deal with situations where the Secretary fails to follow his own regulations? If he

makes an error in his own regulations, does the court touch on that, rather than just violation of the law?

Mr. PEACH. That particular case had to do with the statute rather than his regulations.

Senator METZENBAUM. Have the courts spoken to the issue of what the rights of the Secretary are absent the law and absent regulations; what about the broad-based authority of the Secretary to cancel contracts?

Mr. FEINSTEIN. Well, I think that while this particular decision referred to his inherent right where there is a violation of the statute or of his regulations, I am not aware of a case in which he might cancel on other grounds.

Senator WARNER. We will now proceed with Mr. Wallop.

Senator WALLOP. Thank you, Mr. Chairman.

If you have your report, if you would turn to page 87 of it, which has a chart there. And in that chart, you detail how you arrive at the conclusion that Interior lost \$100 million in the April and October sale.

And if you would go to the last column with the Wyoming sales, my edition would indicate that that total should be approximately \$10 million less.

Mr. PEACH. There was a typographical error in there. The figure for the Keeline tract should be \$19.9 million. There was a "1" that was dropped in that, which we discovered later, which would make that add up correctly. It adds correctly, but the figure for the Keeline tract should be \$19.9 million.

Senator WALLOP. Given that, let me also question you then as to why you included the \$29.9 million for the Rocky Butte sale, which you have concluded was not unreasonable to accept; and the Spring Draw figure of \$28.2 million, which you also said was not clearly unreasonable. And if you subtract that \$58.1 million from those sales, we are really talking about \$45 to \$50 million difference in opinion.

Mr. PEACH. We tried to be careful in the preparation of this report in recognizing the fact that fair market value is not necessarily an entirely precise concept where you can come down to point estimates, and out your total, complete faith and value in those point estimates.

Now in arriving at the \$100 million, the language we used—there is a point in the report about page 59 where we discuss the circumstances surrounding a distress sale of the Dry Fork tract, a tract that was sold at distress circumstances, and it got about 30 percent of the value that it had brought a couple of years earlier.

We used that almost as a bottom line of what you could expect as a reasonable idea of where fair market value could fall for a tract, because that tract had sold for that much more a couple of years earlier.

We said that the ones that fell below that 30 percent level, we judged to be clearly outside the bounds of fair market value. We said the tracts that sold for 48 and 60 percent are questionable. It is not up to us to call exactly where you decide that something is close enough to be within the ballpark of fair market value, or where it is not.

But we did include those in our adding up of the \$100 million of what we thought was fair market value. I think that you have to place your own value judgment ultimately as to whether you think 48 or 60 percent is close enough to be acceptable.

Senator WALLOP. Using your value judgment for the purposes of today and the ones that are stated in your report, that you do add them in. It seems to me that if you add them in, you must subtract them.

There is another area at page 5 of your testimony. You state that the impacts of the Department's decision to use entry levels instead of minimum acceptable bids was "to reduce the coal selling prices by over \$73 million."

That is just not an accurate statement, even after the \$73 million is adjusted to the \$24.6 million for the 13 tracts offered in April.

Is it not true that in fact the Department had not reduced the selling price at all, but it merely said in effect start your bidding here, and when the sale is over, we will determine what the selling price will be; and in fact, did they not use the presale MAB's in his postsale valuation of fair market?

Mr. PEACH. No. 1, you have got to remember that the entry level bidding system was based on an auction premise. You will start the bidding here, and there will be bids that will bid up the price. You have basically one bidder.

Senator WALLOP. Mr. Peach, there are two different things here. You and the department have a disagreement as to the fair market value of the MAB's, fair enough. We will get to that in a little while. But what you say in your statement is that these entry level bids reduce the coal selling prices by over \$73 million. But in point of fact in relationship to the Department's MAB's, it did nothing of the kind.

Is that not a fair statement?

Mr. PEACH. I told you, and I think that the statement makes the point, that you have to look at a lot of different numbers. The original premise when they came up with the entry level bids was to sell 19 tracts, and that was the amount of the reduction that took place.

The only reason that they did not sell 19 tracts was because they could not get surface owner consent in the case of a number of tracts, and they dropped out of the sale.

Senator WALLOP. But that has nothing to do with the entry level bidding. That is another problem altogether, and I grant you that.

Mr. Chairman, my time is up, but I will have some more.

Senator WARNER. Senator Johnston.

Senator JOHNSTON. Mr. Peach, can you justify these bids as Secretary Watt does based on what he calls his philosophy of development; that is to say, this resource should be developed as quickly as possible, this is the way to do it, and in the long run the United States comes out better?

Specifically does understanding the coal reserves offered for lease result in them being developed more quickly or does it result in development that would not occur otherwise?

Mr. PEACH. Most of the competition that we see taking place for tracts out in that area—saying competition, that is not the correct word—most of the activity for leasing, most of the demand that we

think is going to take place is likely going to be for maintenance tracts, to extend and be a part of existing mining operations.

The issue that has been raised of whether we need to move immediately and rapidly to full leasing now, so that these tracts will be out and available for development 10 to 15 years in the future, I think that there can be some questions raised about that in the context of just exactly what Federal coal is in terms of total production in this this country at this point in time, and what the existing leases are that are already available.

There are some questions that can be raised as to the timing of leasing and immediate need for leasing.

Senator JOHNSTON. These leases were apparently underbid by \$60 to \$100 million, is that correct?

Mr. PEACH. That would be our assumption based on our analysis.

Senator JOHNSTON. What return did the United States get for this? Can you argue that this will result in faster development, or the development of coal that would not otherwise be mined, or did we, in fact, get nothing?

Mr. PEACH. I guess that I would say that we have the potential that certain coal will be in development in approximately 10 or so years into the future in some of those cases. There are instances that can be looked at where coal is leased, and was never developed in some of these areas.

So whether or not the coal will be actually developed can be a subject of question. But many of these leases, again to go back, 8 of the 13 were maintenance type leases. They will be folded into the existing logical mining unit of an already existing mining operation. So most of them ultimately should be developed.

Senator WALLOP. Bennett, if you would yield.

This sale will be subject to different rules than the ones that you are talking about that never got developed, correct?

Mr. PEACH. I am sorry, sir.

Senator WALLOP. This sale is subject to a different set of rules than the ones that you said before may never be developed.

Mr. PEACH. You have 8 out of 13 maintenance type tracts.

Senator WALLOP. That are not developed. And, in fact, the Government has got something for nothing, because they will revert to the Government.

Mr. PEACH. If I could just add one thing. Most of the demand, we think, is likely to take place in the maintenance type tract area. And that is the area where we make the recommendation of saying you do not expect those to go on a competitive kind of basis. And we should suggest a negotiated process with appropriate controls. That may be the better way to go to assure that the Government is getting fair value for its resources.

Senator JOHNSTON. What I want to know is if the Government had insisted on the receipt of fair market value, would the tracts have received bids and been leased for fair value?

Mr. PEACH. I think that there are indications that we see from the sale, that people would have been willing to bid more for the tracts. Let me cite three. The Rocky Butte tract, the original bid was rejected for that tract. And the bidder came back and bid twice as much the second time around.

We discussed the change in bid with that bidder. And the rationale that we got was basically, well, they did not accept the first time when I bid just what the entry level bid level was, so I just doubled it, and came up with a higher number.

Senator JOHNSTON. What you are saying then is that this sale is the manifestation of a giveaway as opposed to a philosophy of development?

Mr. PEACH. I think that you have got to go back to the entry level bidding type system, too. That is based on an auction type premise, setting a floor, and having people come in at that level, and having the values bid up. Most of those tracts only got one bidder to come in. And they bid at that entry type level.

The fact that the MAB's ultimately in some areas as adjusted were close to the values that were bid was fortuitous in a couple of respects. There were at least two tracts that have some interesting characteristics to them. One is a very large tract called the Spring Draw tract.

Senator JOHNSTON. Let me, if I may, Mr. Chairman, ask one more question.

Interior has indicated that the new sealed bidding system, which was used at the October 1982 sale, basically takes care of the leasing problems experienced in the April 1982 sale. Consequently, they reason that there is no need to postpone the upcoming sales, as you have recommended in your report.

Do you agree?

Mr. PEACH. No; I do not. We think that the October sale process probably was an improvement over the April sale process, because it did require a single best offer sealed bid by a company. It was not based on an entry level.

Now above and beyond that, though, as we look at our recommendations, we think that there are a number of aspects that Interior needs to take into consideration in terms of revising their program.

One is looking at the economic and geological variables, and how they affect the value of a coal lease. And that has to do with how they use this production adjustment, how they use the small business set-aside adjustments, and how that should affect the value of a tract. We feel that more work is needed in that area.

We think that they need to improve procedures for conducting coal lease valuations including criteria which would require using comparable sales analysis. We think that comparable sales analysis is the best way to go about looking at fair market value. And we think they need to do more to integrate that into the process that they are using.

We think that they need guidelines that would deal with how they use untried or experimental bidding systems. This entry level bidding system was an experimental system. It was used on the largest coal sale in history.

We think that experimental bidding systems can be appropriate, but you are to use them on an experimental basis in an experimental size sale. That is fairly straightforward.

We think that they need to look at minimum regulatory selling prices for coal leases in each Federal coal region on a cents-per-ton basis, and on a minimum dollars-per-acre basis.

One of the things that we found at the Powder River sale was that you are talking about large seams of coal there, and you have to look at how many tons of coal you have in the area that you are leasing. And we think that it may be more appropriate to look at leasing it on the basis of minimum cents per ton for that particular coal, rather than minimum dollars per acre. And you would be more assured of getting fair value in that area.

That is something that Interior's Office of Policy Analysis has done some work on. The groundwork is there. And much of it has been done, if Interior wants to move forward in that area.

Senator WARNER. Mr. Peach, now you are going back over some material that you expounded before, am I not correct?

Mr. PEACH. Basically, what I am emphasizing is we do not think that point by point that the changes made are responsive to the recommendations that we made as to the revisions.

Senator WARNER. If you find it advisable to refer again to earlier testimony, do so by page number, because we have an awful lot of ground to cover here.

Mr. PEACH. Yes, sir.

Senator WARNER. We have a panel of witnesses, and I want to afford each member who is present this morning an adequate opportunity.

Mr. PEACH. Yes, sir.

Senator WARNER. Mr. Hecht.

Mr. HECHT. I have no questions. I want to hear the other panelists.

Senator WARNER. Mr. Metzenbaum.

Senator METZENBAUM. Mr. Peach, the Department of the Interior has questioned your procedures in arriving at your values, and has challenged whether or not you have done a thorough job arriving at the conclusions that you did.

Would you tell us something about the GAO's expertise, and how you went about your job, and if you can tell us why you are qualified to do that which you did in arriving at the conclusions that you did?

Mr. PEACH. I think that that is an important question to ask, Senator. And I think that one of the things that it is important for the Congress to keep in mind is what kind of institution GAO is. One of the ways to ask that question is how many people do you have with vast coal industry experience on your staff.

We do not try to build a staff of people with a lot of vast background of industrial kind of experiences, as opposed to building a staff that has a multidisciplinary capability that is made up of people of operations research analysis capabilities, legal capabilities, economic analysis capabilities, financial analysis capabilities.

And we have the ability to bring to bear the multidisciplinary staff in looking at a particular problem. When we look at something like this Powder River coal sale, we start with Interior's own model, and the analysis of that model developed by their experts and people that they have.

And we interact with them very much in terms of the support for that model, the support for the assumptions that they have put into the model, and the adequacy and the accuracy of the data that they are using, and we validate that very carefully.

And I think that our report lays out in explicit detail the areas where we question the assumptions used by Interior, explain our rationale, and show the nature and the method of adjustments that we make. So it is all laid out there in detail as to how we got to where we did, and it is subject to being analyzed and looked at very carefully.

Senator METZENBAUM. Stepping back and being objective in a critique of your own efforts, GAO's efforts, are you satisfied that you had adequate expertise, and that the conclusions that you arrived at are appropriate ones, or do you have any reservations?

Mr. PEACH. I am satisfied. I, myself, have been basically in charge of and responsible for GAO's analysis work in the energy area, since energy became a problem of national concern in 1972. So I have been involved with, and many of your are familiar with it, every piece of work that GAO has done with respect to energy questions over the last 12 years.

Most of the people that I have here at the table with me have been involved in looking specifically at the Federal resource activity programs of Interior for the last several years ranging up to 5- or 6-year periods. And then we brought in and augmented our staff capability with people with economics, operations research, and other kinds of capabilities in this study as necessary and as needed. So I am satisfied.

Senator METZENBAUM. According to the Department of Interior, efforts to optimize bids would sacrifice jobs, consumer needs, and national security. What is your response to that assertion, and do you think that there would be any negative impact with respect to jobs, the economy, consumer needs, or any other factor in our economy if we postpone any further bidding for another year?

Mr. PEACH. I am not sure that they would be of major impact. You are looking at the development of coal lands far into the future. So I am not sure that some delay in order to make some improvement of the procedure being used would be a major impact.

Senator METZENBAUM. I have no further questions.

Senator WARNER. Senator Domenici.

Senator DOMENICI. Thank you, Mr. Chairman. I just have a couple of questions.

Mr. Peach, is the GAO recommending a 2-year moratorium on all coal leasing?

Mr. PEACH. No, not specifically.

Senator DOMENICI. Are you recommending a 1-year moratorium?

Mr. PEACH. We use the term explicitly in our report of postpone until you make the following improvements. We did not place a time frame, or use the term moratorium. We are looking at some improvements in procedures. We think that the kinds of improvements that we are suggesting are something that if Interior placed the resources on it could be done within a matter of months.

Just exactly how many months, I do not know. But we did not look to try to come up with a time period of saying postpone for this period or something.

Senator DOMENICI. Now here on your production maintenance tract recommendation, which I assume to you makes eminent sense, but to me I can just see changing to production maintenance, a competitive bid sale, to one that is negotiated, I can see

how Congress would react to that. I assume that you would be here after an investigation of those, if they were entered into by negotiation.

And I tend to agree with you that you found a real anomaly in the law, and that you are not going to get competitive lease bids on production maintenance tracts. But your prime recommendation there is that we change the law.

Is that not correct?

Mr. PEACH. That is correct. I might refer you to page 65 of the report—let me make sure. I will get the right page for you. We have a discussion of ways that you can safeguard that kind of process to make sure that negotiations were carried out with the right kind of record that we hope would minimize them being open to the kinds of suggestions that you raise.

But we have specifics. It is on page 75 of the report. In table 6.2, we look at it, and we term it sequential controls in a hypothetical lease negotiation program, and it suggests how it could be put together.

Senator DOMENICI. I do not have much time, so I do not want to go through that, but I will read it.

With reference to the position that some are taking that this is not the right time to try competitive leasing, has GAO made a finding on that; do contend that we ought to be looking for when is the right time to enter into competitive leases?

Mr. PEACH. We did not make any extensive evaluation of the coal market in timing. The one point that is relevant to that that came from our analysis is that we think that much of the demand at this point in time is for maintenance type leases, that there is not a lot of demand for opening new mines.

Senator DOMENICI. With reference to that issue of time with the production maintenance leases which you just described, do you think that there are two sides to the proposition of what might be the right time in terms of the ultimate competition and the consumer interest, or is it all in the direction that seems to be espoused here, that you ought to wait until the market is very buoyant and strong?

Mr. PEACH. Well, of course, from our perspective, we are constrained somewhat by the requirement in the law that they look at fair market value at this point. The consumer argument in terms of getting more of the coal out there now so that it is available sometime in the future may not be directly pertinent to that point of having to get fair market value under the law as is currently required.

Senator DOMENICI. So your analysis if correct addressed the issue of fair market value under the circumstances, not some hypothetical fair market value if times were different; is that correct?

Mr. PEACH. I believe that that is correct. Because the system used by Interior which we built on relates to comparable sales, and using that kind of information in terms of what has been happening in the market.

Senator DOMENICI. Are there comparable sales, Mr. Peach, that are truly relevant to these kinds of transactions?

Mr. PEACH. We believe there are. We have a detailed discussion about the Dry Fork sale in 1970, which was an assigned Federal

tract sold from one company to another, where they had at least three bidders that had interest, and three bids that were received.

So there was true competition that occurred, and that was the value that the regional coal team used in its own model in plugging in information wherever it was appropriate.

Senator DOMENICI. Are there any comparables in the last couple of years?

Mr. PEACH. 1980 was the date of the sale. I said 1970, but it occurred in 1980.

Senator DOMENICI. Is that the only one that we are aware of?

Mr. PEACH. They identified eight possible sales, Interior did. They got two of the companies that were willing to cooperate to furnish them information relative to the sales, so that they could use it. And they thought that the sale at Dry Fork was the one that was most pertinent and the most relevant to their circumstances.

Senator DOMENICI. Thank you, Mr. Chairman.

Senator WARNER. Senator Bumpers.

Senator BUMPERS. What was the price on the Dry Fork sale that they had the information on?

Mr. PEACH. The 1980 sale at Dry Fork was about \$73 million.

Senator BUMPERS. How much a ton, I mean?

Mr. MININGER. It was about 20 cents a ton originally in 1980.

Senator BUMPERS. About 10 cents a ton?

Mr. MININGER. No, I think about 20 cents a ton.

Senator BUMPERS. Twenty cents a ton?

Mr. MININGER. Yes.

Mr. PEACH. When it sold in 1980.

Senator BUMPERS. I do not know when the right time to issue these leases would be. But I can tell you a wrong time in my opinion. It would be when you have 100,000 idle coal miners, and a 150 million ton glut of coal, and about 70,000 coal cars sitting idle on sidetracks.

But, Mr. Peach, I was just reading over Mr. Carruthers' testimony, and he said we have 18 billion tons of Federal coal under lease.

Do you know how much of this has been developed?

Mr. PEACH. I do not have a figure in terms of what was actually developed. One of the figures, just looking for some information—this is another kind of a figure and not directly on the number you were talking about—last year coal production in the United States was about 868 million tons. Of that, about 104 million tons came off Federal lands.

Senator BUMPERS. That is a good figure. So out of 18 billion tons under lease, we produced 104 million tons last year?

Mr. PEACH. We produced 104 million tons last year.

Senator Bumpers. Off Federal lands?

Mr. PEACH. Since 1982. That was a 1982 figure off Federal lands.

Senator BUMPERS. Now that means, of course, that at current rates of production and consumption, we have a 180-year supply under lease. I am not suggesting that that is all that relevant. Obviously, coal production is going to increase at some point.

But under the current rates of production, we would have a 180-year supply already leased?

Mr. PEACH. There is a substantial amount there. I would make the point, which I think is relevant, that given where the coal is located, there may be matters of economics or environmental concerns that may keep a reasonable portion or a good portion of that from being produced, but there is a lot being leased.

Senator BUMPERS. Did you make any determination or attempt to make any determination to validate the Department's contention that a lot of this coal cannot be produced because of environmental or economic conditions?

Mr. PEACH. We did not make a determination as a part of study, but there are a number of areas where there are either serious environmental concerns, and perhaps in some cases economic concerns that are going to keep the coal from being produced at this point.

Senator BUMPERS. Did you make a determination of whether the Department is enforcing the diligence requirements on their leases?

Mr. PEACH. Not as part of this study.

Senator BUMPERS. But the Department has also stated that it has a policy of leasing this coal land in order to help companies build reserves. And, of course, this is a major departure from a previous policy of meeting the demand for coal production.

Did you get to how they determine whether companies need to build their reserves or not?

Mr. PEACH. No, we did not do a detailed analysis of that. It does go back again in many cases to many of the tracts where there is interest being expressed by companies in having the coal leased, and many of the leases being put up are in these maintenance-type tracts that are adjacent to large, already existing mining operations.

And therefore when you put them up for competitive bids, you should reasonably expect that you are going to get one bidder coming in for that tract.

Senator BUMPERS. Have you determined in the course of your study on this, and since you issued the report, whether or not Interior has in fact changed any of its criteria for determining minimum entry levels and fair market value? Has the Department made any of the changes that GAO has recommended?

Mr. PEACH. The change that they made was to change the bidding system between April and October, and go to this sealed bid concept where they are looking for a company to put up their one best offer. And then they will evaluate that in a postsale process.

We think, as described in our report, that there are a number of potential flaws with this current postsale evaluation process that they have, because it relies on getting competition in the actual sale itself in order to make that evaluation.

And with respect to the number of other suggestions we have, we do not believe that they have been fully addressed, no.

Senator BUMPERS. So regarding the July sale which the Secretary is planning right now, do you think that that ought to be postponed until these changes are made? Do you think that there ought to be a moratorium on coal leasing until Congress can address this issue?

Mr. PEACH. I will go back and zero in on the word postpone which we used in our report. We would like to see the sale postponed until they take another look at their procedures, and consider the specific recommendations which we have made in our report for whatever period of time that that reasonably should take. And again, we think that that is something that can be done within a matter of months.

Senator BUMPERS. One other question.

What was the rationale that the Department gave you for going from the minimum acceptable bids system to the entry level bids system?

Mr. PEACH. Well, there were three basic rationales that were used. These were all criticisms of their regional sales teams original information. And they felt that it overvalued the tracts, and that it was going to scare off actual bidders.

And there is a basis for that. They had the feeling that the demand had changed since the Dry Fork tract which was the comparable tract was used, that the demand had changed in the region. And that the comparables sold in the private assignment markets were not as good as a competitive lease sale, so that they did not like using those assignment market sales, and that the comparable tract was subject to different diligence and royalty requirements.

Now without going into them, each one is treated extensively in our report. And we think that we have a good sound rationale as to why none of those arguments are reasonable arguments in the circumstances. And we also found from our discussions with headquarters officials, that we felt that they really did not have a good understanding of the regional coal team's model, and how they had applied that model, and that a better understanding may have given them more confidence; but that the basic approach was good with certain adjustments to areas where there were some questions about the type of adjustments being made.

Senator WARNER. Senator Melcher. *

Senator MELCHER. Senator Bumpers just mentioned the current number of leased acres in Federal coal. But returning to the figures that were available prior to the sale in April 1982, the latest figure we had then, was 812,000 acres under coal leases, in 14 Western States, with an estimated 16.5 billion tons of coal.

It is fair to say that competition was the intent of Congress in establishing fair market value, is it not?

Mr. PEACH. That is correct. We are looking at and hoping for a competitive market. But recognizing the imperfection of the market is one of the reasons that Interior has moved with the model.

Senator MELCHER. We are talking about the basic law, and what the intent of Congress was in establishing fair market value. Even though there had been a moratorium on Federal coal leases for a number of years, and this was to be the first sale competitively offered, there really was not much demand.

Senator Bumpers mentioned how many coal miners were probably out of work at that time, and how many empty coal cars there were and locomotives sitting around. Burlington told me one time, I believe it was about a year before that, that they had 5,000 cars.

They were not all theirs, but there were 5,000 cars sitting idle, coal cars, and about 300 locomotives sitting idle.

Now that was the kind of competitive situation that existed. I will grant that in April 1982, or February, or March, or January 1982, things looked a little bit better for coal producers. But the Department of the Interior was still going by Department of Energy information that said that there would be a demand for electricity growing 1 percent a year, which I do not think has come, and which was a pretty far-fetched projection.

So what we found out in February 1982 was that the companies that testified consolidated or had an interest in one tract, and I do not think that it was offered. Peabody was not interested in any tract that might be offered. Western Energy was interested in some maintenance tracts. The Decker Mine was interested in some maintenance tracts. If you are going to get fair market value, you first of all have to recognize and judge what the competitive situation is at that particular moment, do you not?

Mr. PEACH. I think that that is correct.

Senator MELCHER. Did you do that in this GAO report? I cannot find anything in it. I do not think that you did.

Mr. PEACH. We took a look at the nature of the market in terms of the argument: Had the market changed markedly since 1980? Since the Dry Fork comparable tract sale, which Interior used, had the market changed markedly since 1980?

Senator MELCHER. Did you look at it on the basis of what was the competition, what was the demand?

Mr. PEACH. We have some information early in the report dealing with demand, and the fact that there had been a dropoff in terms of demand in the area. And most of the demand taking place, and it was growing about 3.5 percent a year, it was for maintenance type leases, as you referred to. That is where the demand was.

Senator MELCHER. What puzzles me about this is that I think the Department of the Interior should have recognized that there wasn't much demand, and that possibly their projections of what they were going to receive in bonus bids at the sale might have been high, and only high by a few billion dollars on what they had predicted.

Why do you come up with an even greater fair market value, that is what puzzles me. If there isn't a demand out there, why is there going to be much of a fair market value? It is going to be lower, is it not?

Mr. PEACH. Well, I think—you talked about the market and how many bids you were going to get, all right?

Senator MELCHER. I am talking about demand for coal—

Mr. PEACH. Assume you have a market and numerous bidders, then as a kind of bidding approach, it may work very well to have people to submit their best bid.

But if you are in a situation where you are going to get one bid coming in, you have to have a basis for judging whether that one bid represents value in the market or not; and that is why Interior, realizing that there will be limited competition out there, was using this discounted cash flow model approach to try to determine

what a reasonable approximation of fair market value is, looking also at comparable sales that had taken place in the area.

Senator MELCHER. Well, where were those comparable sales?

Mr. PEACH. That was in that same area. Again, there were sales of tracts in the assignment market, where there were leases already—Federal leases, already held by private companies that were assigning those leases to some other company; so they were selling them in the assignment market.

Senator MELCHER. Under the assigning or the speculation?

Mr. PEACH. Well, there was——

Senator MELCHER. They were from speculator to another, were they not?

Mr. PEACH. In some of these cases you are talking about large companies.

Cities Service, Peabody——

Senator MELCHER. Isn't it fair to say that it was from one speculator to another?

Mr. PEACH. We are talking about Peabody, Cities Service, Texaco, companies like that. So, I don't know whether it was changing what they were planning on doing as opposed to speculation—these are fairly major energy development companies.

Senator MELCHER. I'll come back.

Senator WALLOP. Senator Murkowski?

Senator MURKOWSKI. Thank you, Mr. Chairman.

I believe that within the last several years GAO has come out with a report recommending more Federal leases be put up for competitive bidding; isn't that correct?

Mr. PEACH. We have come out with a report that was put out in 1981—"Shortfall in Leasing Coal from Federal Lands: What Effect Would That Have on National Leasing Goals."

Now, that report was based on looking at Interior's own analysis and judgments about how much land it would put up for lease.

It basically raised a lot of questions about the kind of information that Interior had available to it to make those decisions, suggesting it may not be putting up as much land for lease as it ought to be considering.

Senator MURKOWSKI. What was the reason for that report being compiled?

Mr. PEACH. It was an area—Interior was beginning to open up and go back into coal leasing.

Senator MURKOWSKI. Was it not because there was a feeling—a general attitude in the country that we had not put up western coal leases for some time and that it would be in the best interests of our effort to achieve a greater degree of energy independence that these leases be put up?

Mr. PEACH. That is one of the reasons that motivated the reinstitution of the leasing program, and we were taking a look at the basis on which Interior was building that program.

Senator MURKOWSKI. Is this the first time you have ever done an analysis of this nature on coal under the GAO?

Mr. PEACH. Are you referring to the study we just issued on Powder River?

Senator MURKOWSKI. That is correct.

Mr. PEACH. This is the first time we have done a detailed analysis of a specific coal sale and the circumstances surrounding that particular—

Senator MURKOWSKI. Were any of your colleagues in the coal business previously?

Mr. PEACH. No. None of us were in the coal business previously, or are at this time in the coal business.

Senator MURKOWSKI. Have you been in the private sector involved in the high risk associated with resource development?

Mr. PEACH. No; I have been involved in analysis of energy and other related kinds of issues in response to congressional requests and in response to our general mandate.

What we have is a multidisciplinary staff capability, financial analysis, economic analysis, operations research people, et cetera, to bring to bear on issues that we are asked to examine for the Congress.

Senator MURKOWSKI. But the element of risk associated with the resource development, you can only plug in with a hypothetical item in the sense of trying to evaluate what increased transportation costs might be, or inaccurate engineering estimates regarding overburden, or any one of a number of significant exposures involved in resource development.

Mr. PEACH. We can identify adequate adjustments in certain areas including the overburden or other things, and we did as a part of this review.

Senator MURKOWSKI. And you used the same information, I assume—the same type of information as someone who would be bidding on those tracts would use?

Mr. PEACH. The same information, and the same information which Interior's experts used when they were developing the tract values. Because our work is based on a validation of their model and their assumptions.

Senator MURKOWSKI. I assume you would agree that there is great deal of variation between an analysis of what particular property is going to bring with regard to fair market value or a return to the investor for the development of that property, and the realities of actually doing it.

Mr. PEACH. Well, I think what you are involved in—you have certainly got to have a knowledgeable seller and a knowledgeable buyer.

Senator MURKOWSKI. But still—

Mr. PEACH. The buyer can bid whatever they want, and the seller, which is the Government in this case, has to decide whether you are getting enough value and whether we want to accept that or not.

We may have the choice to accept or to reject.

Senator MURKOWSKI. I know but you still have the element of risk. You can go in and bid on a resource and have market conditions, transportation conditions, labor conditions; all kinds of conditions with respect to value. And, Mr. Chairman, I think that to try and in great detail substantiate whether or not the Government has got a fair price or has got basically a market value is such a broad area of examination that it is very difficult.

You can get as many experts as we have in this room to address the realities of what fair market value is in a case like this because you can't possibly measure the element of risk involved in it; and that is the enterprise system at work in relationship to resource development.

With all due respect, Mr. Chairman, I question the validity of the generality applied in this particular evaluation because I think there is a very broad area of interpretation, and the area of risk is one which is very, very difficult indeed to analyze.

Senator WARNER. Thank you.

Senator WALLOP. Well, I think it is fair to say that, principally—the principal dollar difference, just minor ones, but the principal dollar differences over the production rate adjustment, and that is the major portion of—

Mr. PEACH. The other adjustments are—

Senator WALLOP. Well, I am just making a comment; I am not asking a question because I want to get Interior up here in behalf of others.

I am sure others, as do I, have questions which we would like to submit for the record if you would be—

Senator BUMPERS. Mr. Chairman, could I ask just one short question of him—

Senator WALLOP. Well—

Senator BUMPERS. This will only take a second. I just want to know—on the maintenance tracts—there were seven maintenance tracts offer in the Powder River sale. Did Interior receive more than one bid for any of those?

Mr. PEACH. Yes. There was one of the maintenance tracts that they did receive more than one bid on.

Senator BUMPERS. The other six did not?

Mr. PEACH. That is right.

We analyzed—we have some question; it is raised in our report as to whether that was a sincere bid because of the circumstances under which it occurred. But—

Senator BUMPERS. Thank you, sir.

Senator WALLOP. Your suggestion—postponement—does that refer as well to maintenance tracts and emergency bypass lease?

Mr. PEACH. Not necessarily to emergency bypass lease kind of circumstances, because I think it has been well established that where there is legitimate need—even without regional sales—emergency leasing could continue.

Senator WALLOP. I think we will submit questions for the record.

Mr. PEACH. I will be pleased to respond to them, Mr. Chairman.

Senator WALLOP. Secretary Carruthers.

Secretary CARRUTHERS. Mr. Chairman. I would like to introduce the team behind us—four members of the resource evaluation team, and at a later time if you have specific questions on Powder River, we have that team with us.

Senator WALLOP. Are they from Casper?

Secretary CARRUTHERS. From Casper, Wyo.

All these gentlemen are involved in the resource evaluation on Powder River, and have testified to the Congress on their evaluation procedure.

STATEMENT OF HON. GARREY E. CARRUTHERS, ASSISTANT SECRETARY, LAND AND WATER RESOURCES, DEPARTMENT OF THE INTERIOR, ACCOMPANIED BY DAVID RUSSELL, ACTING DIRECTOR, MINERALS MANAGEMENT SERVICE, WILLIAM D. BETTENBERG, DEPUTY ASSISTANT SECRETARY, POLICY, BUDGET, AND ADMINISTRATION, JAMES M. PARKER, ASSOCIATE DIRECTOR, BUREAU OF LAND MANAGEMENT, ROBERT LAWTON, ASSISTANT DIRECTOR, ONSHORE ENERGY AND MINERAL RESOURCES, DOUG HILEMAN, TEAM LEADER AND MINING ENGINEER, WYOMING REGIONAL OFFICE, DAVID HOUSTON, DEPUTY DIRECTOR, OFFICE OF CONGRESSIONAL AND LEGISLATIVE AFFAIRS, JOHN D. CREGER, MINERALS APPRAISER, WYOMING NORTH CENTRAL REGIONAL OFFICE, NEAL JACQUOT, ECONOMIST, WYOMING NORTH CENTRAL REGIONAL OFFICE, AND ORVEL GUSTOFSON, ECONOMIST, WYOMING NORTH CENTRAL REGIONAL OFFICE

Secretary CARRUTHERS. Mr. Chairman, I appreciate this opportunity to visit with the committee on this important subject.

I would submit my testimony and a host of supporting documents regarding the coal leasing program of the Department of the Interior.

Senator WALLOP. They are accepted for the record.

Secretary Carruthers. Those documents are listed in the back of my testimony.

I would like to briefly summarize what is in all these documents. They respond to three basic questions.

How do we lease coal in the Department of Interior on behalf of the United States of America?

We like to think we do it in a carefully structured, scheduled manner. Our coal leasing program is scheduled over a 5-year period, to distribute coal leasing over the six coal regions represented by U.S. holdings.

To lease coal in the United States, you first have to do land-use planning, which takes 2 to 4 years, and in the land-use planning process of the BLM, we take into consideration all resource trade offs.

We can, in fact, leave coal lands idle simply because other resource uses are more important than coal leasing. We have public participation in that process. We develop an environmental impact statement. And this process takes 2 to 4 years.

But once we have identified coal we think can be developed in an environmentally prudent fashion we go through an activity analysis. The activity analysis, takes 1 to 2 years more and utilizes the services of the regional coal teams.

The regional coal teams in the Powder River had representatives from Wyoming and Montana, two State directors, the State directors from BLM from Wyoming and Montana, and one State director who was from a noncoal State (Idaho) as chairman.

Now, these people in activity analysis take into consideration a host of things. They build upon the land-use plan for the Powder River, and make determinations about how much coal really should be leased. They consider how much has already been leased, is the newest information on the demand for coal, information

from the Department of Energy, tract delineation, and the environmental consequences of leasing in the Powder River, and they we scope out all this information into an environmental impact statement to make sure everyone's interest is taken into consideration.

The regional coal team, which involves both State representatives and Federal representatives, monitors the environmental impact statement process and provides recommendations on leasing levels to the Department of the Interior.

Then we move to the managing of the coal sale. We have to have surface owner consent, consult with Governors, with Indian community leaders, and others as to the efficacy of our program. We then post a sale notice, followed by a sealed bid sale, and a postsale evaluation.

If, in fact, we lease coal lease the opportunity to develop coal, we have lease administration. During lease administration, the industry once again has to do an environmental document and they have to apply for a mine plan. Both must be satisfactory to the Department of the Interior. Further they must adhere to a rather stringent diligence requirement which requires that within 10 years they have to be in commercial production of coal or they lose the bonus bid they paid for the leasing opportunity. The lease is returned to the Department of the Interior and can be sold at some other time.

So, there is an environmentally prudent, publicly discussed, market conditioned process for coal leasing. It takes from 4 to 6 years. It is not an easy process to interrupt, to stop or to start.

And I would like to point out that since this program was put in place, not more than 2 or 3 years ago, we are leasing new coal—new coal that has been considered in an appropriate environmental context. We are talking about situations where people have been consulted, the general public as well as governing agencies. We prefer leasing new coal to the 16 billion tons of old coal that were leased under other conditions years ago by the Department of the Interior without going through this rather laborious and time-consuming and expensive process.

So, why do we lease coal? Well, it is one of two major new energy resources we have in the country, the other being the Outer Continental Shelf.

The U.S. Government is the Saudi Arabia of coal. We control from 60 to 80 percent of the Federal coal in some of the coal regions.

And, as a monopolist in coal, there is no way we as a Government, can behave as a monopolist and introduce the concept of competition unless we lease.

If the Government holds onto the coal as a monopoly; if the Federal Government lets it out at an acre at a time as it sees the demand changing, then it will, in fact, drive up the price of coal through monopolistic behavior in the market.

We believe that we need to offer reserves. If we offer reserves to a sufficient number of companies, they will compete among themselves for the coal business. It is only when we lease sufficient reserves that competition will occur.

And when competition occurs, such as when three lessees approach one power utility, they must compete among themselves for the most efficient way to produce and the best transportation system to deliver the product. Otherwise, you will find the U.S. Government acting as a monopolist and extracting the last dime from the coal business.

Keep in mind, we do have a bonus bid system. The bonus is the way the Government assigns the opportunity. The big money in coal leasing comes from actual production, the 12.5 royalty, and subsequently the taxes that are generated as a result of production.

The bonus merely assigns opportunity; the opportunity to succeed or to fail in a coal business. And, to be successful within the 10-year limit, one must find the market for one's coal; one must find other resources; one must get permits from the State, and in the case of the San Juan Basin, one must build a railroad.

All of those things must be accomplished before an enterprise can be successful; otherwise, the Government takes back the coal lease.

This administration wants a stable supply of reasonably priced energy for consumers. We want less dependency on foreign supplies; we focus on enhancing national security. Sure, we talk about jobs and economy, but it is true that we prefer lease, jobs and economy over extracting a monopolistic profit on our coal leasing program.

It is important for the Federal Government to be recognized as a stable supplier of natural resources. The Government can't get in and out of the natural resources business if industry is going to depend upon it as a supplier.

In and out won't work; it discourages investment; it discourages industry. Support industries do not develop. This behavior fuels the speculative market. We found that out in timber, when in our timber country, we decided we would begin to constrain the supply of timber available to the private sector. The first thing that happened in the timber industry in the Oregon/Washington area, is speculators quickly drove the price of timber up, because no longer was the Government a substantial and consistent supplier of timber.

Now, the third question: Did we receive fair market value for Powder River coal? The answer is "Yes." We base that on the work of our career professional appraisers. We appraised the resources both presale and postsale.

Their determination was, and to my understanding still is, that fair market value for the Powder River coal was received.

The GAO report is professionally done. We have only two problems with the report. Our use appraises different assumptions. And any time someone uses different assumptions in a model, the answers will differ. And clearly they recognize that. We recognize that, and the committee recognizes that.

Mr. Chairman, if you will provide your assumptions, we will run the model for you; and we will get still another set of answers. And that is the nature of economic appraisal work and modeling.

We were not quite sure of the recommendation to negotiate the maintenance tracts. While the logic would tell us it is the way to go, I am unaware of any Secretary of the Interior who would want

to be faced with a potential for all the investigations and discussions that might accompany a negotiated maintenance sale. That is a very difficult task, particularly in a political environment.

But we do appreciate the critique of the GAO. As Monday morning quarterbacks, they are at least as gifted as the rest of us, but no better.

There has been no evidence given that we could have received more. In fact, they point to evidence of tracts that did sell for more at a later sale. We also can point to tracts that didn't sell at all.

And, as a consequence, we believe the market, in fact, did speak. Now, we don't want the committee to be misled by discussions of a leak. We believe we have established a leak did not occur. The whole discussion of the MAB to entry level bid to oral auction versus sealed bid is a good, interesting discussion and one perhaps we ought to have, but has really nothing to do with the fair market value determination.

We go back to our career professionals who claim that their combined presale evaluation and postsale evaluation plus information generated in the sale reveals the United States of America received a fair market value for Powder River Coal.

One of the assumptions the GAO was most interested in was the so-called 50-50 split for maintenance tracts. We agree with the GAO that that is not a prudent thing to do and in our future sales we will not use it.

However, we would argue the other two assumptions made by our professional appraisals were appropriate, and we will continue to utilize those until such time someone can demonstrate they are not appropriate.

We now have a coal leasing program driven by the market system, and the Government approves market operation. I would question if a market is defined by the number of sellers and buyers.

As an economist, I can tell you a market is not defined by the number of competitors in the market.

A market is defined by a willing seller and a willing buyer.

Mr. Chairman, we have with us a team of experts from Casper, Wyo., as I indicated to you, plus my colleagues who are most willing to answer any questions you may pose.

Thank you.

[The prepared statement of Secretary Carruthers follows. Attachments appear as Appendix I to this document.]

STATEMENT OF GARREY E. CARRUTHERS, ASSISTANT SECRETARY, LAND AND WATER RESOURCES, DEPARTMENT OF THE INTERIOR, BEFORE THE COMMITTEE ON ENERGY AND NATURAL RESOURCES, UNITED STATES SENATE

Thank you, Mr. Chairman. I appreciate the opportunity to appear here today to discuss the Department of the Interior's Federal Coal Management Program.

There are three basic components of our testimony. They include:

1. the fundamental principles of the Federal Coal Management Program;
2. the details of the April 1982 Powder River regional coal sale; and
3. the April 1983 report of the Survey and Investigations Staff of the House Appropriations Committee and the May 1983 report by the General Accounting Office on the Powder River regional coal sale.

Following is our position with respect to each of these components.

Energy is the Achilles' heel for America, whether speaking of consumer interests, national defense interests, or international affairs. Coal development can assist in the strengthening of America through the creation of jobs and economic security; fuel for industry or for electricity to heat and cool our homes, hospitals, and schools; and coal can contribute, through exports, to our balance of trade. The Federal Government, through sound management of its coal resources, can make an enormous contribution to American energy independence.

In terms of resource ownership, the Federal Government is a monopolist. In the West, over 80 percent of the coal is controlled by the Federal Government: 60 percent through direct ownership and 20 percent because of interspersed land ownership patterns. Of the Federal lands which contain 200 billion tons of coal, only 18 billion tons have been leased to supply the American consumer.

The Interior Department has responsibility for leasing Federal coal lands and has developed an environmentally sensitive and economically sound leasing program. The Federal Coal Management Program is designed to give the Nation a greater assurance of being able to meet its national energy objectives; provide a means to promote a more desirable pattern of coal development with environmental protection; assure that State and local governments participate in decisions about where and when Federal coal production will take place; and increase competition in the coal industry.

Through the Federal Coal Management Program, coal leasing and development are being done in an environmentally sensitive manner which minimizes the economic and administrative burden on both the public and the Government while assuring a fair return to the Treasury for use of the Nation's coal resources. Some history of the development of this program provides insight.

The current structure of the Federal Coal Management Program is the result of a series of events that began in 1970. In 1970, a Bureau of Land Management study revealed that Federal coal leases were being obtained for speculative purposes and that production from leased Federal lands was inconsistent with the number of acres under lease. To illustrate, in 1945, 80,000 acres were under lease providing 10 million tons of coal annually. By 1971, acreage under lease increased to 800,000, but production had decreased to 9.1 million tons annually. (On April 15, 1983, a total of 17.98 billion tons of coal reserves on 950,085 acres were under lease with production in excess of 107 million tons in 1982.)

An informal moratorium was placed on new leasing in 1971 and, in 1973, a formal moratorium was instituted which allowed new leasing only to meet short-term needs.

In 1974, a draft Environmental Impact Statement describing the Energy Minerals Allocation Recommendation System was published. The final Environmental Impact Statement was released in 1975, but the preferred program was retitled the Energy Minerals Activity Recommendation System. The Energy Minerals Activity Recommendation System program was adopted as policy in January 1976 and final regulations were published in January 1977. This policy was heavily dependent on industry and public nominations to identify the need for tracts for development.

Shortly after the adoption of the Energy Minerals Activity Recommendation System as Departmental policy, a lawsuit was filed alleging that, because of certain defects, the 1975 final coal programmatic Environmental Impact Statement was legally inadequate (NRDC et al., vs Royston Hughes et al.).

On September 27, 1977, the U.S. District Court for the District of Columbia ruled that the Environmental Impact Statement was inadequate, and the Department was therefore in violation of the National Environmental Policy Act. Accordingly, the Department was enjoined from implementing the Energy Minerals Activity Recommendation System leasing policy and was directed to prepare a supplement to the coal programmatic Environmental Impact Statement to meet National Environmental Policy Act requirements.

During 1976 and 1977, legislative action also occurred that impacted the design of the Federal Coal Management Program. In 1976, the Federal Coal Leasing Amendments Act, which established specific rules to guide the development of Federal coal (including competitive leasing), was passed. In that same year, Congress enacted the Federal Land Policy and Management Act requiring that the Bureau and the Department ensure that all resource development decisions related to the public lands, including coal leasing, are made in cooperation with State and local governments as part of a comprehensive planning process. In addition, the Surface Mining Control and Reclamation Act of 1977 requires the Secretary to review Federal lands to determine whether they contain areas which are unsuitable for all, or certain types of, surface coal mining operations.

In 1977, a coal policy review was conducted within the Department which concluded that a new programmatic Environmental Impact Statement would be prepared to fully consider the new legal requirements and to respond to the court order. The Department filed on appeal to the NRDC vs. Hughes decision (NRDC vs. Hughes, 454 F. Supp. 148 (D.D.C. 1978)) and reached a negotiated settlement, which was adopted as the June 1978 amended court order. The amended court order allowed more flexibility to issue coal leases to meet certain "short-term" needs until a new coal leasing policy could be established.

The result of the coal policy review was a new programmatic Environmental Impact Statement published in April 1979, the adoption of a new comprehensive program in June 1979, and the issuance of final program regulations in July 1979. Secretary Andrus announced this program in a Memorandum to the President dated June 4, 1979, and I quote from that memorandum:

"On June 2, I gave my approval to a new Federal coal program that will make 1.5 to 2 billion tons of coal available for prompt leasing and, in the long run, will clear the way for leasing up to 200 billion tons of coal. One of the most critical decisions I made was to streamline the system used by the Bureau of Land Management to determine which Federal lands should be considered unsuitable for coal mining. Another critical decision concerned maximum economic recovery, which, by statute, must be determined before a lessee may mine coal and which requires the lessee to mine a specified amount of coal. In response to further analysis by the Department and concerns expressed by industry, other agencies of the Federal government and the States, I chose a new definition for maximum economic recovery which corresponds with the manner in which economic decisions are made by industry and is far less costly to this Department to administer."

The program was further refined in July 1982 to strengthen the leasing methodology and again in January 1983 to add additional public participation through the coal State Governors and to enhance the role of the Regional Coal Teams.

Interior's coal management program is primarily directed toward issuing new leases and involves four major steps. The first step is land-use planning and public review, where lands acceptable for coal leasing are identified in conjunction with other resource decisions. In the second step--activity planning--a schedule for coal lease sales in each region is selected and analyzed with full public participation in an Environmental Impact Statement.

A leasing level for each region is selected by the Assistant Secretary in the third step of the program. The last step of the program sets out procedures for managing individual coal sales. From the time a tract is selected for sale until a lease sale is held, several administrative and statutory requirements must be completed. They include: (1) obtaining written consent from qualified private surface owners over federally-owned

coal; (2) public participation and consultation with State Governors, the Attorney General, affected Indian Tribes, and surface management agencies; and (3) evaluating the results of the competitive lease sale to determine if fair market value is achieved and to select the successful bidder.

The fundamental changes reflected in the new coal leasing program include:

- o formal land-use planning with public involvement and Governor consultation;
- o full examination of alternative leasing strategies and full disclosure of environmental effects and mitigation measures;
- o leases offered competitively with assurances for receipt of fair market value; and
- o stringent diligent development requirements. (If a new lease is not developed and producing in commercial quantities within 10 years of lease issuance the lease (plus the bonus bid and rental income) is forfeited and returns to the Government.)

In addition, emergency lease applications for areas within coal regions are considered in the interest of resource conservation for cases where Federal coal may be bypassed or where coal is needed to continue existing production or meet existing contracts. The program also contains provisions for the processing of pending preference right lease applications that remain from the pre-1976 prospecting permit-preference right leasing system. The Department has adopted a work program which will process these remaining preference right lease applications to the point of decision by December 1, 1984.

The changes to the coal leasing program provide many benefits over the pre-1970 program, particularly in the following areas:

Economics

- o Accelerated leasing with the new environmental safeguards and stringent diligent development requirements prevents speculation by industry and allows environmentally preferable coal leases to compete with older leases which did not comply with current environmental standards. Consequently, the costs associated with environmental damage are minimized.
- o Continued leasing keeps the value of leases competitive and prevents industry from gaining windfall profits on old leases which would result from restricting the market.
- o New leasing reduces speculation via lease transfer or reassignment because industry or supply contracts can now shop competitively in the marketplace for new leases.

- o By offering leases competitively and requiring industry to submit sealed bids, the new program forces industry to disclose what they are willing to pay and helps ensure receipt of fair market value.
- o By discontinuing the practice of leasing as a monopolist, the Federal Government can help reduce the price of electricity, manufactured goods, and inflation and can eliminate the hidden tax consumers have otherwise paid.
- o The leasing program provided \$123 million in bonus revenues from January 1981 to October 1982 and \$101 million in royalty revenues in FYs 1981 and 1982. These revenues are shared 50/50 with the States.

Environment

- o All new leasing has environmental safeguards. Environmental Impact Statements are prepared for:
 - o Program development and adoption.
 - o Resource management plan or land-use plan for regional coal program prior to lease.
 - o Mine plans submitted for review and approval.
 - o Reclamation plans modified to reflect changing technology.
- o New coal leases with environmental safeguards compete with old leases which were issued prior to new environmental standards.
- o Current program has more stringent mitigation standards and requirements than ever before.
- o New leasing allows clean burning low sulfur coal to compete with lower quality resources.

Public Participation

- o New leasing is done with full disclosure and full public participation through the planning and Environmental Impact Statement processes.
- o Governors are consulted and the Secretary publishes his reasons for accepting or rejecting the Governors' recommendations.
- o Regional Coal Teams are established to oversee the leasing program and provide an open forum for public participation. Recommendations developed at the local level guide the program.

- o Planning and Environmental Impact Statement processes are developed openly to provide full disclosure to the public and provide opportunity for the public to make comments and recommendations.

National Economy - Jobs

- o Developing domestic coal resources provides for employment in America rather than in foreign countries. Specific examples directly affected are mining, transportation (e.g., railroads), electric utilities, steel and metals, and heavy equipment manufacturing. Industry indirectly affected includes automobile manufacturing, light equipment manufacturing, and construction trades. Local economies also directly benefit.
- o Coal development can displace imported fuels currently used for power plants or heat processes thereby improving national economic strength by reducing imports.
- o Reducing costs at home through competitive markets improves America's ability to compete in foreign markets and with foreign manufacturers in American markets.

National Security

- o Accelerated leasing and development of domestic resources reduces America's dependence on unstable foreign imports.
- o Coal can displace fuel oil in areas such as electricity generation or other heat processes and thereby substitute for an energy source where we have hundreds of years of reserves rather than remain dependent on an uncertain supply.
- o Synthetic fuel development for national security is dependent on new coal leasing.

Consumer Interests

- o Accelerated leasing increases market competition and eliminates the hidden tax American consumers have paid because of monopolistic pricing of Federal coal reserves.
- o Accelerated leasing is expected to result in achieving our goal of lower consumer prices for:
 - o Oil and gas.
 - o Electricity.
 - o Steel and metal products.
 - o Manufactured goods.

In summary, the new coal leasing program has six cornerstones:

1. sound economics;
2. environmental protection;
3. public participation;
4. national economy and employment;
5. national security; and
6. consumer protection.

The Powder River Basin coal lease sale of April 28, 1982, was the largest offering of Federal coal leases in the history of America. It also generated more bonus revenues than any other single sale—\$66 million.

Several aspects of the Powder River lease offering have been questioned--some in a less than objective light--and the following discussion should serve to set the record straight with respect to: the timing of the lease offering, receipt of fair market value, and a comparison among coal regions and over time between past and present leasing policies.

The Federal Government owns, in the name of the American people, about 200 billion tons of coal reserves on 100 million acres of coal lands. To date this Administration has leased tracts containing 2.3 billion tons, or about one-half of 1 percent per year. Obviously, at this rate, it will take even this Administration's aggressive leasing posture more than a century to lease the public's coal reserves.

Coal leasing had been at a virtual standstill since 1971 when a moratorium was placed on leasing to give the Department time to develop an overall Federal coal leasing policy. A decade later--the Government having taken its time developing this new policy--Interior renewed lease offerings in Colorado, Utah, Alabama, and, last April, Wyoming and Montana.

There are those, however, who insist that Interior should not lease more with "so much already under lease." That insistence, however, is balanced by the many critics of the coal leasing moratorium, including the General Accounting Office, Department of Justice Antitrust Division, Council of Economic Advisors, Department of Energy, and the old Office of Wage and Price Stability. The principal theme of these Federal agency analyses, each prepared during the last Administration, strongly argues that a policy of leasing to meet the demand for reserves is necessary to avoid significant increases in consumers' price of energy derived from coal.

The previous administration voiced their opinion on this issue through a speech by Steven P. Quarles, Deputy Under Secretary of the Interior on September 25, 1979, and I quote:

"In deciding just how much to lease, an important consideration will be the losses or damages that would result from leasing what turned out to be too little Federal coal, as compared with the losses or damages that would result from leasing too much. Presently, I think it would be accurate to say that we regard the consequences of leasing too little as a more serious threat than the consequences of leasing too much."

Quantifying the demand for reserves is an imprecise science, but several additional rationale suggest that the demand for Federal coal is significant and, if leasing is not forthcoming, will mean higher costs for consumers:

1. The U.S. Geological Survey's coal transportation model indicates an annual cost to the American economy could approach \$2 billion by 1995 if restrictive coal leasing policies, such as those of the last administration, were to continue. The U.S. Geological Survey finds that additional leasing, such as in the Powder River Basin, is the basic ingredient to cost savings to the consumer.
2. As indicated through expressions of interest the Department routinely solicits, there was a demand for 6.1 billion tons of reserves in the Powder River Basin. The Department had 22 billion tons of environmentally suitable coal from which to choose. Based on recommendations from our regional coal teams, Secretary Watt chose to offer 2.3 billion tons of reserves in Powder River--significant tonnage, but far less than that suggested to us and only about 1 percent of Powder River Basin's total reserves.
3. Of the 18 billion tons of reserves leased, a significant portion may not be developable for a number of reasons, including insufficient tract size, environmental restrictions, access problems, lack of rail transport or water, or legal climate. In addition, to presume that every ton under lease should be committed to development prior to leasing an additional ton is to conclude that all coal to be leased in the future is more costly to mine than already leased reserves--clearly a failed logic. In fact, much of the tonnage recently offered for lease in the Powder River Basin is of lesser mining cost than existing leased reserves in the Basin.
4. The Department of Justice has advised the Interior Department on numerous occasions that anything short of leasing to meet the full demand for reserves could be anti-competitive and serve as a barrier to entry into the western coal market.

^{1/} The Uniform Appraisal Standards for Federal Land Acquisition define fair market value as the "amount in cash, or in terms reasonably equivalent to cash, for which in all probability the property would be sold by a knowledgeable owner willing but not obligated to sell to a knowledgeable purchaser who desired but is not obligated to buy." This includes not simply bonuses, but the sum of bonuses, rent, royalty, and Federal taxes.

Although competition for individual tracts at the April 28, 1982, lease sale was not intense, two of the five new mine capacity tracts received more than one bid. It is important to note that all of the new mine tracts received bids, a solid indicator of the demand for additional leasing. In addition, for eight of the 13 tracts offered, the Department expected only one bidder, at most, given that these were captive "maintenance tracts" and thus were suited to the adjacent operator. Eleven of the 13 tracts received bids, 10 of the 11 reflected a fair market value¹ return to the public, and one (the Rocky Butte tract) was rejected because it did not meet the criteria established to determine fair market value.

Some controversy has arisen concerning the question of whether the high bids received and accepted by the Department constitute fair market value. To address this concern, a brief explanation of the process used by the Department in conducting the Powder River sale is appropriate.

In early 1982, the Minerals Management Service prepared an estimate of the value of the tracts to be offered for sale in the Powder River Region. Consistent with the Department's policy established in 1979, the Minerals Management Service envisioned that the resulting estimates of value for the individual tracts would be used as minimum acceptable bids. Minimum acceptable bids, under the Department's rules, constituted the minimum dollar per acre amount that a bidder had to offer to have the bid considered by the sale panel. When the estimates of value were reviewed at the Departmental level, it was determined that the estimates were too high for use as minimum acceptable bids for the purpose of entertaining bids for the coal leases. This determination is consistent with standard bidding theory which warns that minimum bids set at a high level can chill bidding competition.

For these reasons, it was determined that for the Powder River sale the post-sale evaluation of the bids received should be modified to incorporate any information gained from the sale itself that improved our understanding of the fair market value of the tracts. Shortly after March 2 when the first presale estimates of tract value were transmitted to Washington for review, and formally through a meeting of senior policy staff of the Department on March 19, the determination was made to publish "entry-level bids," instead of the presale estimates of tract value as minimum acceptable bids. The entry level minimum bids were subsequently published in the Sale Notice released to the public on March 25, 1982, and published in the Federal Register on April 1, 1982. The detailed internal procedures to be utilized by the Minerals Management Service in determining the acceptability of bids were approved by the Under Secretary on April 27. The sale took place on April 28, 1982, as scheduled.

A large part of the controversy surrounding the Powder River sale centered on an alleged unauthorized disclosure of the Department's presale estimates of tract values, and that industry pressure led to the change to the entry level minimum bids. The Department's Inspector General has completed an investigation of the alleged "leak" and has reported that suspicions of a "leak" arose from a lack of communication between offices of two Departmental

agencies. The conversations with industry that led Minerals Management Service field personnel to notify the Headquarters Office of a probable "leak" by memorandum dated March 26, 1982, actually occurred after the Bureau of Land Management released the Sale Notice with the entry level bids to the public on March 25, 1982. The Minerals Management Service field personnel were not aware that this information had been officially released and therefore assumed that it had been released prematurely, or "leaked." I would like to submit a copy of the Inspector General's report for the record.

A review of the sale results is also in order to show why the Department is confident that its procedures resulted in a successful sale, meeting the statutory obligation to obtain fair market value. A first important point concerns the amount of coal offered for sale. Consistent with the Department's existing regulations, the level of leasing for the sale was based on Department of Energy estimates of demand in the year 1990. The amount of coal the Secretary chose to offer for sale in Powder River had been recommended by the Regional Coal Team for that region as their preferred alternative in the Environmental Impact Statement. Moreover, the amount of coal offered for sale was approved by the Governors of Wyoming and Montana.

A second point concerns the relationship between high bids received and the Minerals Management Service presale estimates of tract value. It has been argued that these estimates of tract value constitute fair market value even though the data used to develop them could have been improved. Nevertheless, if we were to assume that these estimates of tract value were actually valid, it is important to note that all of the high bids accepted by the Department in the Powder River sale met or exceeded the presale Minerals Management Service estimates except the high bid for one tract--Little Rawhide Creek--which is a production maintenance tract. This is because the primary criterion actually used in accepting bids was the presale estimate of value. Details of this procedure are attached to Secretary Watt's May 17, 1983, memorandum to the House Appropriations Committee. Production maintenance tracts are not, as a rule, integral mining units and, consequently, cannot be treated as such in determining their value.

Whether or not you accept the dynamics of the Powder River sale of last year, there can be no question of the results. Of the 13 tracts offered, 11 received bids. On those 11 tracts, the minimum bids utilized in the final sale notice ("entry level bids") were higher in two cases and lower in two from the "minimum acceptable bids" of the former system. Of the two lower figures, one was rejected by the Bureau of Land Management panel which evaluated the bids.

The "loss" numbers generated by House Appropriations Committee staff appear to include two tracts which failed to receive bids--an indication that the entry level bid may still have been too high--and one tract for which the ratio of overburden to coal was in error, an error which overstated the initial "minimum acceptable bid" figure by four times. The "loss" numbers

reported by the General Accounting Office are based on economic analyses using assumptions different than those used by the Department or completely disregarding adjustments, most of which the Department does not agree with.

The Department continues its search for even more effective means of ensuring the receipt of fair market value for leased mineral resources. We welcome any advice you have toward this objective.

The final issue for us to address regards the reports by the Survey and Investigations Staff of the House Appropriations Committee on the coal leasing program and the General Accounting Office report on the Powder River lease sale. The reports raise basic questions concerning the future conduct of the Federal coal leasing program and the administration of the Powder River coal lease sale of April 28, 1982.

I will comment on each report separately, beginning with the House Appropriation Committee report. First, I want to comment on the overall quality of the report which is replete with factual errors and is also filled with inconsistent economic and other arguments. This no doubt results from the lack of any clear economic concept in the report for the role of Federal coal leasing. With respect to any professional standards, it cannot meet the test.

With regard to fair market value, the report makes only one substantive criticism and that is on the so-called "Jim Joseph procedure" where excess economic rents are split evenly between the lessee and the Government. This procedure was put in place in 1980 and used in all sales until the summer of last year. At that point the Department modified its fair market value standards to eliminate this procedure.

A complete list of the inaccuracies, errors, and inadequacies of the House Appropriations Committee staff report would be too long to include in my testimony here today, but a copy of the Department's response to the report to the House Appropriations Committee is attached for the record.

The General Accounting Office report, in contrast to the House Appropriations Committee staff report, is a much more objective and professional report. While we strongly disagree with several of the report's assumptions, conclusions, and recommendations, the General Accounting Office clearly has a better understanding of the complexities of Federal coal leasing than the House Appropriations Committee staff. We also note with interest that the General Accounting Office anticipates that coal demand is going to increase, while the House Appropriations Committee staff said that the coal market was very soft and that the Department should have waited to lease coal reserves.

Our principal objection to the General Accounting Office report is its contention that the fair market value of the Powder River leases sold was \$100 million higher than the total of the accepted high bids.

Mr. Chairman, you should be aware that the evaluation of Federal coal lease tracts involve a series of detailed and complicated calculations. These calculations are an attempt to characterize nine basic factors affecting the value of a coal tract through equations using in excess of 40 different elements. These calculations have been assembled into a computer model that was first developed in 1976 and has been continuously updated to account for changes in conditions such as tax law and mining technology.

In the General Accounting Office's evaluation of the Department's conduct of the Powder River lease sale, their investigators learned of the calculations and the computer model. The General Accounting Office correctly identified some of the more critical factors and requested the Department to make several runs of the model inserting the General Accounting Office's adjustments for some factors, and most importantly, ignoring the production rate factor. Since the General Accounting Office ignored the production rate adjustment, it is not surprising that the resulting tract values differed by a significant amount. This is the principal source of the dramatic "losses" claimed by the General Accounting Office in the sale.

In response, our position is a simple one. We have, without question, one of the best collections of technical experts available in the country, a group of geologists, economists, and mining engineers representing 124 years of experience in their respective fields. These experts draw upon their experience and use all available data in performing their analyses. We cannot possibly in good faith consider any other alternative but to rely heavily upon the studied professional analyses of these experts as the principal ingredient in our fair market value decisions.

I can tell you, as an economist, that the results obtained from economic models are driven by the assumptions made. So, now having been made aware of three different sets of assumptions (the House Appropriations Committee staff, the General Accounting Office, and the Department of the Interior) and thus three outcomes, how does one choose? Does one go with auditors or resource evaluators? I'm going with the career professionals who have spent most of their careers evaluating the resources in the various coal fields the Federal Government controls throughout the United States. I cannot accept as conclusive the judgment of a few auditors who spend several months evaluating the coal program in all its complexity.

However, the General Accounting Office has been quite perceptive in my view. For example, in an August 22, 1980, report, they say "resumption by Interior of the coal leasing program, after almost 10 years of inactivity comes at a crucial time. Coal, which this Nation has in abundance, is expected to be relied on increasingly throughout the remainder of the century as the one major energy supply source which can help bridge the gap between our overdependence on imported oil and gas and our ultimate

reliance on an inexhaustible resource." 1/ In their new report, they are also equally as perceptive in that they state and I quote, "Estimating the value of a Federal coal lease is at best a difficult process." 2/ They additionally say and I quote, in this report: "GAO believes the approach used by the evaluation team, although imperfect and in need of some adjustment, was reasonable under the circumstances and provided a technically sound basis for estimating the fair market value of Powder River tracts." 3/

The remaining question then is should we be leasing America's coal reserves? We maintain in the Department of the Interior and I maintain, personally, that the answer is yes, if we do so in an environmentally prudent fashion and we receive fair market value. And the answer is yes if you happen to be a taxpayer, if you happen to be an energy consumer, or if you happen to be interested in national security.

Submitted for the record along with our testimony are the following:

1. Letter to the Honorable Sidney R. Yates from Garrey Carruthers, Assistant Secretary of the Interior for Land and Water Resources dated May 17, 1983 (with attachment).
2. "A Memorandum to All Members of the House Appropriations Committee, U.S. House of Representatives, from James Watt, Secretary of the Interior dated May 17, 1983 (with attachment).
3. May 11, 1983, Inspector General's Report of Investigation, Powder River Federal Coal Lease offering.
4. Report entitled The Federal Coal Management Program and the Department's Coal Leasing Policy, prepared by the Department of the Interior, Bureau of Land Management, May 1983.
5. Memorandum to the President from the Secretary of the Interior, Cecil Andrus, dated June 4, 1979.
6. Speech entitled "The Future of Federal Coal: delivered by Stephen P. Ouarles, Deputy Under Secretary of the Interior, on September 25, 1979.
7. Final Report and Recommendations for the Secretary on Fair Market Value and Minimum Acceptable Bids for Federal Coal Leases, Department of Interior, Office of Policy Analysis, December 1979.

1/ Government Accounting Office Report EMD-80-87, A Shortfall in Leasing Coal from Federal Lands: What Effect on National Energy Goals?, a report to the Congress, August 22, 1980.

2/ Government Accounting Office Report RCED-83-119, Analysis of the Powder River Basin Federal Coal Lease Sale: Economic Valuation Improvements and Legislative Changes Needed, a report to Congress, May 11, 1983.

3/ IBID.

8. December 1, 1980, decision memorandum signed by James Joseph, Under Secretary of the Interior regarding "High Rent" "Small" Tracts.
9. General Accounting Office Digest, August 22, 1980, report A Shortfall in Leasing Coal From Federal Lands: What Effect on National Energy Goals.
10. Report An Analysis of Existing Federal Coal Leases United States Department of Interior, Bureau of Land Management, March 1976.

Mr. Chairman, this completes our testimony and we would be pleased to respond to any questions the Committee might have.

Senator WALLOP. Thank you, Mr. Secretary. We will start again on the 5 minutes procedure, and begin by asking why the Washington immediate order to the Inspector General for an investigation when it was learned that a potentially proprietary information had occurred in the April 1982 Powder River Basin sale?

Secretary CARRUTHERS. Mr. Chairman, I am going to ask Mr. Russell to respond to that. There was an investigation but it was not by the Office of the Inspector General, as I understand it.

Mr. RUSSELL. Mr. Chairman. In fact, we did inquire of the Inspector General's office shortly after a memorandum came from Casper, Wyo., to Reston, which alerted the headquarters office of Minerals Management Service to the possible compromise of the sale because of—

Senator WALLOP. Pull the mike just a little closer to you.

Mr. RUSSELL. We asked the Inspector General if it would be appropriate for him to investigate this.

He advised us that the General Accounting Office had already been requested to investigate, and it was customary procedure not to duplicate an investigation that had already been planned.

So, we let GAO handle the investigation. We conducted an informal investigation on our own within the Department—that is, the Minerals Management Service did. As I reported to Senator Bumpers last week, that informal survey, the GAO report and the IG report all had things to say about the alleged leak that would lead us to believe that there was possibly never a leak.

Senator WALLOP. Have you taken any steps to better protect against the potential of leaks?

Secretary CARRUTHERS. Yes, Mr. Chairman. Since the Powder River sale, as you are aware, we have merged that Division of the Minerals Management Service with the Bureau of Land Management; and they bring with them their procedures for handling confidentiality of data. They are good procedures, ones that have been used for a long period of time. They are now merged with the division which actually does the leasing; and we view the merger as being very productive in terms of both resource evaluation and protection of information.

Senator WALLOP. You are satisfied with the Inspector General's report that it essentially says that no leak occurred?

Secretary CARRUTHERS. I am satisfied with his report, yes, sir.

Senator WALLOP. Were you, Secretary Carruthers, or Mr. Russell, or anybody from Casper if they care to make an expression, pressured or lobbied by any person or group to lower the prices for the coal sales from the—

Secretary CARRUTHERS. Mr. Chairman, I will defer to Mr. Hileman, who is the team leader. I think that is more appropriately answered by himself.

Mr. HILEMAN. We had no pressure at any level.

Senator WALLOP. At any level. Thank you very much.

Secretary CARRUTHERS. Mr. Bettenberg would also like—

Senator WALLOP. Was there any contact with you about the prices?

Mr. HILEMAN. No contact. In my business, I have daily contact with these people, the oil company officials, but there was no contact I know of for the purpose of pricing.

Senator WARNER. Could you broaden that? You are the team leader. How about other members of the team? Do they all wish to speak for themselves?

It might be well to have them identified.

Secretary CARRUTHERS. Mr. Chairman, Mr. Bettenberg would also like to respond.

Mr. BETTENBERG. If I could add to that. I sat in on the General Accounting Office briefing for the Secretary on their presentation of their conclusions at the end of the report, several weeks ago, and I asked them that very question.

In their examination of the Powder River sale, did they find any evidence whatsoever that there was any political pressure brought to bear on the technical evaluation team that established the values that were used in the sale.

And they said, "Absolutely not."

Senator WALLOP. Thank you.

Mr. Chairman.

Senator WARNER. Let's let the record reflect the positions of each member of the team with respect to both pressure and contact.

So, would you introduce the members of your team so—you have got to speak loudly to help the reporter.

Mr. GUSTAFSON. I am Orvel Gustafson. I am an economist on the economic evaluation team, and I have had no pressure from industry.

Senator WARNER. No contacts?

Mr. GUSTAFSON. Nor contacts.

Senator WARNER. Who else was on the team?

Mr. CREGER. My name is John Creger, appraiser. I also have not received any pressure from industry pertaining to the economic evaluation.

Senator WARNER. All right.

Anybody else?

Mr. JACQUOT. My name is Neal Jacquot, and I am an economist with the team. I received no pressure; nor did I have contact.

Senator WARNER. Thank you.

Senator METZENBAUM. Mr. Chairman, I would like to point out what one individual considers pressure, someone else may view in a different light entirely.

Senator WARNER. When your time comes for questioning, Senator, you may reopen that, if you so desire.

Or do you——

Senator METZENBAUM. It is my time.

Senator WARNER. All right. Go right ahead.

Senator METZENBAUM. You say that you are in touch with these people in the industry daily and that you received no pressure from them. Was the subject of the minimum bids ever discussed or ever mentioned indirectly or directly in any discussion at any time?

Mr. HILEMAN. I have dealt with most of those companies for 13 years——

Senator METZENBAUM. Answer yes or no.

Mr. HILEMAN. No.

Senator METZENBAUM. Anybody else? Your answers are all no. It was never mentioned? No mention? No discussion at all as to the minimum bid price?

[All respond negatively.]

Senator METZENBAUM. Let me come back to our witness for a moment.

Senator WARNER. If the Senator would yield, the record should reflect that each of them acknowledged the negative to your question.

Senator METZENBAUM. That is correct.

Mr. CARRUTHERS. I have difficulty in following your reasoning. You made much of the fact that since we have a monopoly of coal in this country, we need to offer this coal for lease in order to avoid monopolization by the Federal Government.

Secretary CARRUTHERS. In order to overcome monopoly.

Senator METZENBAUM. At the same time, is it not a fact that you just extended the deadline for diligent or timely development on coal leases issued before 1976 and that you have given those lessees an additional 10 years?

Secretary CARRUTHERS. Mr. Chairman, I don't think we extended any deadline. It was the interpretation of law, a matter of law, and our best legal advice was we had to go that direction.

I don't think it was necessarily a choice—a policy choice. Mr. Houston might want to amplify.

Senator METZENBAUM. You had to, as a matter of law, give them an extension for 10 years?

Secretary CARRUTHERS. An interpretation.

Senator METZENBAUM. Tell me, what law provides that?

Secretary CARRUTHERS. An interpretation of law, the 1976 Coal Amendments Act.

Mr. HOUSTON. That's correct, the Federal Coal Leasing Amendments Act of 1976 provides for the 10-year diligence provisions. The Solicitor has interpreted that to be 10 years for all new leases and 10 years from date of first readjustment for old leases.

A lease is a contract with the individual; to require diligence changes in that contract prior to time of readjustment he determined was not the proper application of the statute.

Senator METZENBAUM. What does that mean? I don't understand.

Mr. HOUSTON. That means you have a contract which you cannot go in and unilaterally modify. There is no provision for reformation of contract during the term of the lease. Opportunity for reformation of contract terms occurs at readjustment.

Senator METZENBAUM. Were the contracts provided that the lessee was to develop the coal?

Secretary CARRUTHERS. Pre-1976 there was no diligence requirement. We can only apply the 1976 law after their contracts come up for readjustment post-1976. That is the only time you can apply that, according to our legal interpretation.

The law was passed after we gave the contracts, so our first opportunity to apply the 1976 law to the previous leases would be post-1976.

Senator METZENBAUM. Who gave you this interpretation, your own lawyers?

Mr. HOUSTON. Yes, that is correct. What you have pre-1976, is leases for 20 years. We did have development and diligent development provisions in those leases.

In 19—

Senator METZENBAUM. You specified this in those old leases?

Mr. HOUSTON. That is correct, in the 20-year lease, and each 20 years you can readjust lease terms. You can readjust the terms of the contract every 20 years.

In 1976 Congress added a new provision to the statute which said if you are not into commercial production at the end of 10 years, the lease reverts back to the Government and the lease is terminated.

The question is one of at what point do you make that provision of statute applicable to previous contracts? The Solicitor said and interpreted that you clearly have a right to put those diligence provisions in the contract at the first date of lease readjustment, which means as soon as the lease is readjusted, those diligence provisions become applicable and that is how that is currently enforced.

Senator METZENBAUM. That means that the due diligence requirement that Congress enacted in 1976 would not have any application until the year 2000, is that right?

Mr. HOUSTON. Not necessarily. It would be applicable on date of first lease readjustment. As an example, if we had a lease that had been issued in 1957, in 1977 when we changed that lease, when it came up for lease readjustment, the diligence provision would go in.

If you had one in 1966 and you came to lease readjustment in 1986, the provisions would go in. It is orderly application of the diligence provided by statute.

Senator METZENBAUM. Mr. Chairman, my time has expired but I just want to make it very clear this is the most absurd legal conclusion this department could arrive at as far as any lawyer is concerned. To extend the diligent development deadline is totally flouting the will of Congress. Combine that with the Department's rules with respect to preference rights leases, and again, it comes back to the point that I made originally: There is nothing that this Department does to cause any American to have confidence in the credibility or integrity of the Department.

Secretary CARRUTHERS. Mr. Chairman, if I might respond?

Senator WALLOP. If you'll yield just for a second, Senator, it was you who continues to say that this Government has a contract with the timber operators and it cannot be adjusted—

Senator METZENBAUM. That's certainly a lot different than what I am saying now. That is a contract and this is no contract.

Senator WALLOP. Sure it is.

[Simultaneous conversations.]

Senator WARNER. We are not practicing law, we are writing law now. Let's get this clarified now.

Senator METZENBAUM. We've written the law. They won't abide by it.

Senator WARNER. Well, let's see if we can't clarify this. Mr. Carruthers, did you indicate you wanted to supply further testimony on this dialog?

Secretary CARRUTHERS. Mr. Chairman, we would be happy to have our Solicitor advise you in writing as to his logic and thinking with regard to this sanctity of contracts issue.

I am an economist so I practice law rarely, but I can tell you the logic of it, the public perception to a person like myself, uninitiated in the law, is that if I knew at the end of 20 years I could get a contract adjustment and it was written into my contract, it would be my expectation at that time to have new things introduced into my contract, one of them being 10-year diligence.

And that is a prerogative of the Federal Government as a result of the act. Logic would tell you it is the first opportunity we have to do what you want done.

I don't know of any other opportunity to do it.

Senator WARNER. Now that letter should be directed to the subcommittee and shared with our colleagues.

Secretary CARRUTHERS. Yes.

Senator WARNER. Now counselor representing the Solicitor's Office, do you want to add some further—

Secretary CARRUTHERS. He acts like a lawyer, too. He is interpreting. We will have to bring our Solicitor—we do not have our Solicitor with us at this time.

Senator WARNER. We will now turn to Senator Domenici.

Senator DOMENICI. Mr. Secretary, as a result of the Powder river sale and its aftermath, is it not true that the proposed moratorium being discussed would cause problems in the exchange, including BISTI which Congress authorized you to make in order to facilitate protection of the BISTI badlands, wilderness study area?

Secretary CARRUTHERS. Yes, sir, Mr. Chairman. The strictest reading of the language I originally saw would preclude any activities dealing with coal and coal exchanges or coal leases.

Senator DOMENICI. This is a question for us to look at in terms of the language, whether or not this Senator is for the moratorium, if it is going to be proposed, the will of Congress regarding exchanges such as that, you would have to be exempt from it for that authority and power to continue, is that what you are telling me?

Secretary CARRUTHERS. That was the interpretation of the original language. I have not reviewed any amended language from the House, Senator.

Senator DOMENICI. Have there been any changes in the coal leasing program as it pertains to the Four Corners area in the State of New Mexico versus the methods used in Powder River Basin?

Secretary CARRUTHERS. Yes, sir. In the San Juan Basin, we will use sealed bids, \$100 minimum entry level bids for all tracts. That would be a sealed bid and a postsale evaluation of that sale.

Senator DOMENICI. Depending sales such as the one at Four Corners have State-interested parties, industry and others, taking part in the coal leasing program up to this point?

Secretary CARRUTHERS. Yes, sir. It's a long process. We have been at it in the San Juan Basin for a number of years. The Indian tribes have been consulted.

The State of New Mexico has been consulted. We are now doing the analysis on our environmental impact statement. The determination, however, to lease in the San Juan Basin has not been made

nor has any target leasing level been established until we complete the environmental impact statement work.

The State of New Mexico has agreed in writing. Secretary Biterman agreed with the regional coal team that an 800 to 900 million ton level might be most appropriate.

So the State has participated. The Governor, now I see, has another view on the issue.

Senator DOMENICI. I have no further questions, Mr. Chairman.

Senator WARNER. Senator Bumpers?

Senator BUMPERS. Mr. Secretary, I understand that the Department got a memo 1 month before this sale suggesting that a leak of this change from minimum acceptable bids to entry level bids had occurred, and that therefore the sale procedures were compromised. What did you do at that point?

Secretary CARRUTHERS. Well, first, Senator, if I might correct you: the information that was allegedly leaked had nothing to do with MAB to entry level bid system.

As I recall the memorandum, and my staff can correct me, the memorandum dealt with just the presale evaluation of the tracts. It was not part of the transition to the new leasing program.

I think the memorandum I saw, sir, was dealing with those pre-sale evaluations; is that correct?

[Pause while confers with associates.]

Secretary CARRUTHERS. It did not address the transition to another leasing mode.

Senator BUMPERS. Give me just a second, Mr. Chairman, I am looking at a memo here.

There is a memo from Dwayne Hull to the Deputy Chief, Onshore Minerals Management, in which he says:

Since we have a new system and will not publish your MAB values, it is more critical to hold these values. It has been confirmed to members of our staff that our MAB values have been distributed by unknown parties and are in the hands of some industry, State and private individuals.

We can also safely presume that many Federal employees have these figures without a real need to know. Our fear is that since not all persons or groups have access to those figures, the sale procedures may be compromised.

Now what, if any, action did you take when you got that memo?

Secretary CARRUTHERS. I will defer to Mr. Russell.

Mr. RUSSELL. Senator Bumpers, the timing of this memo is important. Clearly, Mr. Hull wasn't fully aware of all the procedural changes that had taken place. Dr. Carruthers has referred to the merging of BLM and the Minerals Management Service and how we hope that it will effect the future efficiency of the process.

But the fact of the matter is the revised minimum bids had already been made available to the public by the Bureau of Land Management on March 25, the day before Dwayne Hull put that memo in the mail.

Thus, the change to the system had already been made.

So Mr. Hull's fears about the sale being compromised I think were unfounded.

Senator BUMPERS. Well David, you are generally given credit for being the one who initiated the change from minimum acceptable bids to entry level bids. Is that a fair accusation or not?

Mr. RUSSELL. I was involved.

Senator BUMPERS. Would you say you were the chief honcho in that change?

Mr. RUSSELL. I would be pleased to take credit for that.

Senator BUMPERS. Well, then tell me what the rationale for it was?

Mr. RUSSELL. The rationale was fairly simple actually. The people in the field had been given the opportunity to use comparable sales as the method to come up with minimum acceptable bid.

Only information from two of a total of eight comparable sales were available to them, though, because companies had not agreed to share that proprietary data with the public. In addition, an earlier Federal sale in Utah had gone belly up, I guess is one way to describe it, because only one of four tracts had received a bid in large measure because the minimum acceptable bids were too high.

So, based on that and discussions we had with professional staff at Reston with the Minerals Management Service, we looked at what the minimum acceptable bids were that were being recommended for this April 28 sale. We found problems with the assumptions used such as the data from the comparable sales being two years old and a market that was different.

It was data from the assignment market rather than a competitive market. The comparables had different diligence standards than those new leases would have.

We had enough questions about the use of those comparables that we decided the time was right to institute a process that we were using offshore already which emphasized postsale evaluation. We would use not only the comparables we had tried to adjust and that we had questions about, but we would also use the comparables from the sale itself, from the competition the high bids received.

Senator BUMPERS. David, let me ask you this question: Wouldn't it have been infinitely better and given your department a lot more credibility if you had gone ahead with the sale, and it nobody bid high enough to get these tracts, you simply had another look at it?

Or wouldn't it have been better to make some of the value determinations after the sale? Instead, you cut the fair market value down before the sale to an entry level bid, which was almost a 50 percent cut.

Mr. RUSSELL. Senator, I think it is important to stress that we did not do as you are suggesting here. First of all, of the 11 tracts that received bids, we increased the value because of this different system on 2 of the tracts and decreased on 2.

Of the two which were decreased, one was projected anyway, so it comes down to one maintenance tract where the value was lower than the original number.

So we did not cut those numbers in half.

Senator BUMPERS. Well, Mr. Chairman, if I could just followup. I know my time is up here, but the figures that were given us a moment ago by Mr. Peach contradict that pretty decidedly.

You only lowered the bid on one tract; is that what you are saying?

Mr. RUSSELL. I am saying of the 11 tracts that received bids, the change from minimum acceptable bid to the entry level bid system resulted in a decrease in only 2 cases.

Of course, we are not including here, Senator Bumpers, those tracts which did not receive bids.

Senator BUMPERS. Now, on page 15, the Keeline, Rocky Butte, Spring Draw, and Coal Creek tracts, were none of those maintenance tracts?

Mr. RUSSELL. That's correct. If you would like to look at the Keeline tract, there is no difference between the minimum acceptable bid and the entry level bid.

Senator BUMPERS. Wait a minute. We are talking about two different things.

Mr. RUSSELL. All right.

Senator BUMPERS. You are saying that only one tract brought less than the entry level bid.

Mr. RUSSELL. No, Sir. I am comparing the minimum acceptable bid with the entry level minimum, that is the difference in the two systems used.

I think if you run through all the tracts, you will see in two cases we increased the numbers and in two cases we decreased the numbers. One of the decreases ended up in a tract rejection, and that was Rocky Butte.

Secretary CARRUTHERS. I think it is important to note, also, Senator, just because we changed systems does not mean that we gave up on the minimum acceptable bid information.

That presale evaluation information which we had gone to some expense and lengths to generate was used in the postsale evaluation and combined with sale information to evaluate tracts at that point. We just changed the system to four categories of entry. It is difficult to assign a specific value to a coal tract, but it is not as difficult as this is our top coal and we must have entry level bids at 8 cents a ton; this is our intermediate coal and so on.

Senator BUMPERS. Let's just take Wyoming. If you look at page 22 of the GAO report, the minimum acceptable bid was \$3.59 million and the entry level bid was \$3.57 million, so you only reduced that by \$20,000.

Are you with me on this, David?

Mr. RUSSELL. Yes. You are talking total dollars now instead of cents per ton.

Senator BUMPERS. Well, that is 8 cents per ton. No, wait a minute. [Pause] Where is the cents per ton figure?

Mr. RUSSELL. Do you have your chart with you, Gary?

Senator BUMPERS. David, just go through each tract and tell me for each tract what the entry level bid was and what the minimum acceptable bid ton was?

Mr. RUSSELL. Yes, sir. The Keeline tract—

Senator BUMPERS. Now where are you getting this information? Is there some place where I can follow you?

Mr. RUSSELL. This is a printout that the Geological Survey's—

Senator BUMPERS. Was this in your statement, Mr. Carruthers?

Secretary CARRUTHERS. No, it is not.

Senator Bumpers. Is it in the GAO report anywhere?

Mr. RUSSELL. We can use the GAO table if you prefer. Theirs is in dollars rather than cents per ton.

Senator BUMPERS. Wait just a minute. [Pause.] David, so we are both looking at the same information, let's just start with Wyoming and Spring Draw.

Mr. RUSSELL. Fine. All right. The minimum acceptable bid on that was 8.5 cents a ton.

Secretary CARRUTHERS. Mr. Chairman; that's the one that was initially a little over 16 cents a ton.

Senator BUMPERS. Well, now according to the GAO report on page 16, it shows it to be 8.5 cents.

Secretary CARRUTHERS. Mr. Chairman, that is the one with the overburden problem. The GAO acknowledged this morning the original estimate, the minimum acceptable bid, was considerably higher, but they had failed to properly account for the overburden, and as a consequence, that subsequent minimum acceptable bid on Spring Draw, in terms of millions of dollars, was \$12.7 million.

I think it is about 3.9 cents per ton.

Senator BUMPERS. OK. Now go to Rocky Butte. Your minimum acceptable bid on Rocky Butte in Wyoming was 6 cents a ton. What was the entry level bid?

Mr. Russell. The entry level bid was 2.5 cents a ton and that was rejected as being too low.

Senator BUMPERS. All right. For the Little Rawhide Creek tract, the minimum acceptable bid was 13.4 cents per ton. What was the entry level bid?

Mr. RUSSELL. The category it was placed in was 8 cents a ton. That is one of the two which was lowered.

Senator BUMPERS. All right. South Duck Nest Creek, 2.5 cents a ton. What was the entry level?

Mr. RUSSELL. Two-and-a-half cents a ton.

Senator BUMPERS. All right. On Fortin Draw, 2.6 cents.

Mr. RUSSELL. That tract was withdrawn because there was an error in the tonnage listed.

Senator BUMPERS. All right. On Kent's Creek, 0.8 of 1 cent.

Mr. RUSSELL. That was withdrawn because—

Senator BUMPERS. And 0.06 of 1 cent, was that one withdrawn? For the Timber Creek tract?

Mr. RUSSELL. That was withdrawn.

Senator Bumpers. Keeline, 0.05 of 1 cent.

Mr. RUSSELL. The minimum acceptable bid and the entry level bid were the same in that case.

Senator BUMPERS. All right. Now go to Montana. For Spring Creek, the minimum acceptable bid was 19.5 cents. What was the entry level bid?

Mr. RUSSELL. That tract did not receive a bid, so we didn't think it was relevant to compare those.

Senator BUMPERS. Well, did you have an entry level bid on it?

Mr. RUSSELL. It was in the 8 cents a ton category, but even at that level, it did not receive a bid.

Senator BUMPERS. I thought you said you didn't go forward with an invitation on that one.

Mr. RUSSELL. No, Sir. That tract was offered.

Senator BUMPERS. It was offered and you got an 8 cent bid?

Secretary CARRUTHERS. Zero bids. No bids.

Senator BUMPERS. Even at 8 cents you got no bids?

Secretary CARRUTHERS. Correct.

Senator BUMPERS. OK. North Decker, 9.7 cents?

Secretary CARRUTHERS. No bids.

Senator BUMPERS. Colstrip D, 0.14 of 1 cent?

Secretary CARRUTHERS. The same as the entry level.

Senator BUMPERS. Colstrip C?

Mr. RUSSELL. Same as entry level.

Senator Bumpers. Were those let, incidentally?

Mr. RUSSELL. Yes, Sir.

Senator BUMPERS. At those prices?

Mr. RUSSELL. Yes, Sir.

Senator BUMPERS. Colstrip A and B, 0.07 of 1 cent.

Mr. RUSSELL. Same as the entry level and that was leased.

Senator BUMPERS. Coal Creek was 0.04 of 1 cent?

Mr. RUSSELL. Same as the entry level bid.

Senator BUMPERS. West Decker was 0.02 of 1 cent?

Mr. RUSSELL. Same as the entry level bid.

Senator BUMPERS. Incidentally, West Decker, did you sell that?

Mr. RUSSELL. Yes, Sir.

Senator BUMPERS. At 0.02 of a cent?

Secretary CARRUTHERS. No.

Mr. RUSSELL. That was the standard minimum, which was \$25 per acre.

Secretary CARRUTHERS. West Decker was listed at \$1 million—no, \$1,000 and we sold it at \$20,000.

Senator WARNER. Senator, in view of time, could you—

Senator BUMPERS. I'm sorry.

Senator WARNER. I would like to have this for the record, if we could.

Senator BUMPERS. If I may, Mr. Chairman, let me just ask two more questions.

Senator WARNER. Well, you've now gone quite over your allocated time. Maybe as we go by we will see if we can accommodate the Senator.

I will interject some questions at this point, On May 13, the House Interior Appropriations Subcommittee approved an amendment in conjunction with the 1983 supplemental bill which would place a moratorium on future coal leases.

The amendment reads, quote, "None of the funds in this or any other act shall be expended for the sale or lease of coal on public lands," end quote. As I read this, the amendment would not only bar leasing for new mine production, but would also prohibit emergency leasing to avoid bypass coal or to maintain an existing mining operation.

What construction do you put on this amendment?

Secretary CARRUTHERS. Mr. Chairman, that is a construction we put on that language. Additionally, we are concerned not only about the bypass coal situation but that we might have to take care of a greater concern to the United States and to this Government. If you actually vote such a moratorium and the President were to agree to it, all these professional people we have accumulated over the years in the service of the BLM who do resource evaluation will have nothing to do and we will have to disband our professional corps of resource evaluators.

We think a 1-year moratorium would ultimately cost us 3 to 5 years in energy leasing.

Senator WARNER. Did the full committee amend that to allow the emergency bypasses?

Secretary CARRUTHERS. My understanding is the full committee does have additional language. I have not seen the full committee report, however, Mr. Chairman.

Senator WARNER. Well, I would also be concerned about the maintenance leases. That would be very detrimental to our corps program if they were stopped, would it not?

Secretary CARRUTHERS. The maintenance tract? Yes, sir. Anytime you bypass coal, anytime you go around coal, you leave an island that we don't believe will ever be economically developed.

Senator WARNER. I am not suggesting what recommendations the subcommittee or the full committee of the Senate might take, but we have to—we may well have to deal with this issue.

I think it would be helpful to you to amplify for the record various alternatives that could possibly arise with reference to this type of amendment, and what the ramifications would be on the Nation's coal program.

Now, do you feel there is any need for legislation on this subject, leasing?

Secretary CARRUTHERS. No, sir. I think the laws are appropriate. We spent 10 years out of coal leasing; just recently got back into coal leasing, and as a consequence, we have had to make some changes.

I would remind you the program began in an earlier administration. They had some observations about coal leasing which we still think are useful. For example, in a memorandum to the President of the United States and the Secretary of the Interior, that Secretary of the Interior says, "I gave my approval to the new Federal coal program that will make 1.5 to 2 billion tons of coal available for prompt leasing and in the long run will clear the way for leasing up to 200 billion tons of coals" a rather ambitious thought on the part of Secretary Andrus as he wrote to the President of the United States.

This is in the record. We have submitted this for the record, but I think the previous administration anticipated there would be a growth in coal demand, there needed to be a transition into coal and the power-generating utilities.

Senator WARNER. I will defer now to my colleague, Senator Nickles.

Senator NICKLES. Thank you, Mr. Chairman.

You asked the question I was waiting to ask, and that was on the moratorium as pending before the House.

Then you think that would be very much a bad mistake for Congress to follow it. We did enact a year or some indefinite time moratorium on any coal leasing.

Secretary CARRUTHERS. Senator, I do indeed and my colleague reminds me that in a memorandum to all members of the House Appropriations Committee, we document some of the reasons for that.

I think I have enumerated some of them. Our loss of professional staff would be devastating to energy leasing in the country. We have to come to grips sometime in the Government that we are

going to be a consistent partner with industry in this country in the development and utilization of resources. Going in and out under moratorium situations as we have been doing in coal, really just encourages substitute resources.

The industry cannot tolerate our in and out habits. They ultimately have to make long-range plans on how they are going to develop energy resources in their company, and if they look at a Government that is up and down, in and out all the time, they cannot view that government as being a consistent supplier, and that is a disadvantage to our efforts to develop our own energy resources instead of using those of another country.

For the reasons we spell out here, I do not believe a moratorium is in order. Of course, we will continue to change the coal program. Moratoriums are not going to encourage us to make any more changes or any less changes than we would make as a result of our experience in coal leasing.

Senator NICKELS. I appreciate your comments. I also appreciate your comments—I think it would be very fool-hardy if we proceeded with a moratorium, not just from the revenues that might impact on the Government, but for an energy policy and for the desire, I think, that most all of us would share to reduce the dependence we have on imported other energy resources.

Certainly I think we need to——

Secretary CARRUTHERS. Senator, if I may just add, something not all people clearly understand, there are a lot of other things that happen after a lease is issued.

We assume that, just because we issue a lease today, tomorrow we are going to go into coal production. In the San Juan Basin of New Mexico, where I grew up, until we lease some coal, the railroad is not going to build a railroad to move the coal whether it is State, Indian, or Federal coal.

There is no need for a railroad if coal is not leased. The Federal Government is a monopoly supplier in that area. We are not going to develop the ports we need to ship coal to other countries until somebody has a resource.

We are not going to develop any coal slurry pipelines to deliver coal to various parts of the United States until somebody has coal leases. So a lot of things happen after you issue a lease.

Senator NICKLES. Is there any average amount of time, or would you happen to have that figure, between the actual lease and actual production of coal.

Secretary CARRUTHERS. Yes. The diligence requirement is 10 years. For full production, one company has indicated to me, I think it is Utah International, Senator, but I could check for the record—has indicated that it takes 15 years to achieve full production, 15 years for an operating coal mine in the San Juan Basin in New Mexico.

I have not run into any companies who thought much less than 7 or 8 years was necessary.

Senator WARNER. If the Senator would yield, Mr. Secretary, we've got some coal down in Virginia ready to move for the export market.

Senator MELCHER. We've got some in Montana,

Senator WARNER. So I'd be a little cautious on that.

Senator NICKLES. Mr. Carruthers, an additional question. A lot of the attention focused in the headlines came out in the papers that Interior lost or wasted or gave away \$100 million due to this GAO report and I was able to catch part of the statement made by GAO, and I see in looking at one of their attachments where they came up with that \$100 million.

But I also listened to many of the statements that were made by Mr. Russell in talking about the entry level prices versus minimum acceptable bids. Many of those were quite similar and—or equal to or what not.

Then many did not receive bids either on the entry level bid or minimum acceptable bid; is that correct?

Secretary CARRUTHERS. That's correct.

Senator NICKLES. So really what you were saying, yes, the market is soft and the companies that were in bidding weren't—a lot of companies weren't bidding evidently or weren't interested in coal even at the prices which were offered either at minimum acceptable bid or at entry level bid; is that correct?

Secretary CARRUTHERS. Well, we had a surprising outcome in the Powder River. As we developed the Powder River sale, according to the resource evaluation staff back here, they were aware of at least 20 companies that had indicated they would like to be involved in the Powder River sale.

Ultimately I think four companies bid. We had knowledge of 6.1 billion tons of reserves they nominated to be sold. We offered 2.3 billion tons and ended up selling 1.6 billion tons.

But clearly the industry had expressed to us far greater interest earlier on than they exhibited when the marketplace opened.

Senator NICKLES. They were probably expressing that interest though when you were looking at oil prices that were in the \$40 range and conversely they've seen their profits and their margins decline fairly substantially.

I have looked at the list of companies. Some of them were integrated in oil. Some of them possibly not. I am not that familiar with all of the companies that were involved.

I can't help but think that the overall decline—you know, we had natural gas prices declining, falling down substantially; particularly the uncontrolled price of natural gas has fallen substantially in the last 12 months alone.

So I can't help but think that maybe some of these other factors in the economy, particularly in the energy economy, is bound to decline in the interest and demand on some of these new leases.

Secretary CARRUTHERS. That's true, Senator, but let's keep in mind we go through a long process of discussion and deliberation and scientific inquiry regarding how much coal should be leased.

The regional coal teams look at the results of Department of Energy models. They look at the amount of coal available in the Powder River right now and the chances this coal will ever come online.

They go through that process in Casper, Wyo., not in Washington, and they report back to us: These are the levels the Department ought to offer.

That is a professional judgment made by the State and our best people in the Bureau of Land Management. They don't make a

judgment if Thursday is a good day for a sale or maybe we should wait until Friday afternoon.

That is not a judgment they can make nor is it a judgment any of us can make. But the Government, as a monopolist, should not withhold the opportunity for development when we know full well, in the next 10 or 15 years, must be stronger in the energy business.

Why should the Government behave like a monopolist and create inflationary situations on down the road? We can't wait for that today market. We have to make our judgments over the long term.

We have offered this coal after a long-term planning. We are looking at the future of the country 10 years or 15 years from now. And to judge just on 1 day's market is not giving the system a chance to operate at all.

Senator NICKLES. Thanks very much.

Senator WARNER. Senator Melcher?

Senator MELCHER. Secretary Carruthers, you are repeating what I have heard so often for the past 13 years from the Assistant Secretary of whatever administration: warning us of how long it takes to do all this, and how much is needed in leadtime.

I keep finding myself thinking, well, I have come in at the middle or the tail end of a movie I have already seen two or three times before. I have heard it in 1970, 1972, every 2 years, every year, right up until now.

It is an estimate of demand. I don't quarrel with wishful thinking, that we wish we had a real solid coal market because we have the coal. I deeply wish we had a real solid coal market, but we don't.

In Montana where we have so much of this Federal coal and so much of the coal reserves of the country, I keep telling folks out there that we are scared to death we are going to be overrun by development after development because they happen to read the Department of Interior's estimate.

The Bureau of Reclamation had out a dandy estimate. I believe it was about 1973 or 1974, and they said they were going to build 30-some synfuels plants in Montana alone. That was enough to scare anybody.

Of course, that study was a waste of money. It was egregiously inaccurate and maybe we will get one synfuel plant built; we don't know. This demand for coal has always made me wonder when it is going to come, when there is going to be a solid market and we can start counting on it, because people do have to count on it, beginning with the companies that have to make the investment; also with the folks that are going to be there in the developed area.

My home county in Montana is Rosebud, and we have Peabody and Western Energy mining coal there. Westmoreland is over in the adjoining county. So we know a little bit about the impact.

We know a little bit about the advantages and the disadvantages of coal development.

Secretary CARRUTHERS. Senator, the system we have in place takes from 4 to 6 years to make the judgments as to exactly which tract will be offered.

We do take into account all the factors you are concerned with.

Senator MELCHER. Well, I know that. I have watched that being hatched by various administrations over the course of the dozen

years. The moratorium was absolutely essential because there wasn't anything in place.

Out of that moratorium came EMARS. I had forgotten about Energy Mineral Activity Recommendation System [EMARS] until you had it here in your testimony. EMARS began in the mid-1970's.

The fact still remains that we have had so much Federal coal leased prior to the moratorium—16.5 billion tons, 8,000-some acres in the 14 Western States. That much Federal coal was leased.

There has been little done to clear that up. It is true that about half of that can logically be expected to be developed by companies who are in the business to produce and sell coal.

But the other half—I will be conservative. I will say 7 billion tons of which your Department says well, probably it will never be developed. That may or may not be true, but it is about time we find out whether that coal that has been under lease prior to the moratorium—it has been under lease a long time and probably not even subject to the 1976 act—what is going to happen to it and what kind of a drag on the market is it?

Because until we do, we really don't have much business continually promoting the system and these studies which cost a whale of a lot of money—you just mentioned the number of experts that you would have to let go if we had another moratorium for awhile. They cost a lot of dollars, and to what value?

We don't even know what is going to happen to that 7 billion tons and we ought to know. And we ought to first of all determine that before we proceed much further.

Now I would be encouraged if you would come here and recommend some changes in this law because I think we are going to have, first of all, to require some kind of development of those outstanding leases, or we are not going to be able to estimate what the demand is.

Secretary CARRUTHERS. The 10-year diligence requirement will take care of that.

Senator MELCHER. At what time?

Secretary CARRUTHERS. It depends on the date of readjustment of the lease.

Senator MELCHER. And when are you going to do that?

Secretary CARRUTHERS. They are doing them right now, I suspect.

Senator MELCHER. All right. That will be another 10 years, will it not?

Secretary CARRUTHERS. No. It depends on the date of adjustment. If it was 1976—

Senator MELCHER. No. If you adjusted the lease today, one of these old leases?

Secretary CARRUTHERS. It would be 10 years from today.

Senator MELCHER. Ten years from that time?

Secretary CARRUTHERS. That's correct.

Senator MELCHER. All right.

Secretary CARRUTHERS. But they have been adjusting them since 1977.

Senator MELCHER. All right. I am encouraged by that.

Secretary CARRUTHERS. So that—

Senator MELCHER. So by 1987 a few of those are going to be—they are either going to put up or cancel it out.

Secretary CARRUTHERS. And that is the beauty of the system, Senator. People don't understand that all we have done is offer up opportunity. If it is not forthcoming, if they can't be successful, if they can't pass the State of Montana licensing procedure, if they can't buy water in Montana to develop coal, if for some reason in the environmental process they can't prove up, that lease comes back to the United States.

But they were at least offered the opportunity to try to develop the resource, and a good share of those will fail. I saw an estimate from a 1976 study by the Department of Interior that was more like 60 percent of them possibly could be developed under diligence requirements.

The debate at that time was over whether diligence would have an effect or not. They claimed that about 20-something percent of them might not be developed if you applied the diligence requirement.

Senator MELCHER. I would daresay that unless there is a dramatic shift in demand for coal, that that is a very high figure—a high estimate of what actually will be developed.

The hurdles that they must go through in order to get approved, in order to get into production, beginning with the money end of it, are gigantic. Nevertheless, what this ought to mean to some Department of Interior—I would hope to this one—is that we really don't need to add to more speculation.

We talked to Mr. Peach about speculation and I thought he had something when he said that he had some comparable sales. However, narrowing that down, he had one comparable sale which was a demonstration of the high speculation; somebody who had a lease sold it to a group of coal companies in July 1980 for approximately \$75 million.

They were willing to discuss this. Because it is their right not to discuss it if they don't want to, but they were willing to discuss it. In turn, within 2 years, they sold it for \$23 million.

The buyer at \$75 million sold it for \$23 million.

Secretary CARRUTHERS. In 1980?

Senator MELCHER. Bought it in 1980 and sold it in 1982.

Secretary CARRUTHERS. Speculation is a concern that was reported to us by a House committee that investigated the Powder River and they were greatly concerned that this speculative market was hot; there was a lot of value being passed forth and back among holders of leases.

And the only way I am aware of, Senator, you can overcome a hot speculative market is to have the monopolist—the Federal Government—lease more, and therefore there will not be any value in operating in the speculative market.

Senator MELCHER. I don't suggest that as being a cure, because I think that can create more speculation. You are now going to get a high bid on a lot of this and they are going to speculate on the basis of believing some Department of Energy report, or the Department of Interior's report or somebody else's report that says we are going to have a huge demand for coal by 1991 or 1993, and therefore we are going to hold some leases.

Secretary CARRUTHERS. Let me correct you, Senator. We don't lease for demand. That was in the old days. The previous administration believed you could actually anticipate that demand and you could lease to it.

That is not our posture at all. We lease for reserves. We try to develop a competitive environment much like that which is pressed upon us by the Justice Department and some others. We try to make sufficient reserves available so competition actually occurs among coal producers for those limited opportunities to sell coal to power companies and other customers.

Senator MELCHER. Mr. Secretary, I am not going to argue or quibble with you over your model versus the GAO model or anybody else's model. I think models can be self serving. They can prove a point. They can disprove a point, and they are designed to do that.

And they are designed also to be the best guesses. What I am going to suggest is this: that we will probably have to revise the law. If you can do it under existing law, please advise me.

You have upped your minimum from \$25 per acre to \$100 per acre. Now you could also establish whatever you wanted to on those maintenance tracts for fair market value, could you not?

Secretary CARRUTHERS. We have done that. We have indicated values above \$25 an acre, which used to be our minimum. We have actually evaluated presale those tracts, assigned a minimum bid. I think in one case it was \$4,200 an acre.

We signed a minimum bid and we got \$4,225 for it. But that is within the discretion of the Secretary.

Senator MELCHER. Now that was on a maintenance production tract?

Secretary CARRUTHERS. That was on a maintenance production tract, yes.

Senator MELCHER. Well, you always raise questions and some of them occurred right in my home county again, Rosebud, when several of those maintenance tracts went for \$25 per acre and probably came out on some of them to less than one-tenth of a cent or less than one-half cent per ton as the bid.

It doesn't sound like very much, and it isn't very much. The maintenance production tract, they must be let and that was one of the problems with the moratorium.

Many of the people that testified at the hearing of the Subcommittee on Energy and Mineral Resources in February of 1982 said they were glad the moratorium was over because they had so much difficulty even getting maintenance production tracts, which were absolutely essential to keep the existing mine going.

They were glad the moratorium was over and they were glad they were going to have a sale, even though they weren't going to bid on it, even though they didn't have any interest in the coal.

In face of that lack of demand for coal, the sale was held anyway. The better judgment of the Secretary, and I wish you had advised that he do so, would have been to cancel the sale except for the maintenance production tracts and then look to see what else was necessary.

There might have been one or two of those tracts which were necessary. Even the North Decker tract wasn't offered and that

could be conceivably called a maintenance production tract. Have you looked at that one?

Secretary CARRUTHERS. North Decker was offered and no one bid on it.

Senator MELCHER. Have you let that one since then or are you negotiating with them?

Secretary CARRUTHERS. No, we don't negotiate sales of tracts.

Senator MELCHER. On the maintenance production tracts?

Secretary CARRUTHERS. Maintenance production tracts are bid, even though we recognize that it may be only one bidder.

Senator MELCHER. Well, you would sell it—you would sell a maintenance production tract, advertise it and sell it as one sale; would you not?

Secretary CARRUTHERS. I suppose, yes, sir,

Senator MELCHER. I hope you will, because that was a big drawback during the moratorium—getting those maintenance production tracts cleared in time for the mine to stay open.

Secretary CARRUTHERS. Well, we have a regularly scheduled—5-year schedule for coal leasing and the Government comes back to the various regions on a scheduled basis to assure that maintenance tracts are offered.

Now for future leasing sales, I don't have the figure but some of my staff can provide it for the record. Our future leasing schedule shows considerably more development tracts than maintenance tracts available. This is an effort once again to have those reserves available to those who might want to get into the coal business and to become competitors.

Senator MELCHER. The little bit they are going to pay on that bonus bid is not the big guide to whether or not they are going to open up that mine.

Secretary CARRUTHERS. That's correct.

Senator Melcher. They will buy that and they won't put in their order to buy the machinery, will they?

Secretary CARRUTHERS. Well, within 3 years they have to provide a mine plan.

Senator MELCHER. I know, within 3 years they have to provide that. But frankly by the time they put in a sketchy mine plan which may or may not say they have got someone to build the equipment for them on a firm basis, you don't know where you are.

I am not going to blame you for that because that is the law. You are doing, I suppose, almost everything according to the law and I am not going to fault you on it unless GAO is onto something when it says that you made a mistake in your model. You may have violated your own regulations there. I will reserve judgment on that. But what is abundantly clear to me is that this administration is looking through the demand situation with some sort of rose-colored glasses that nobody else has in the business. And you can be encouraged by this company or that company when they tell you to well, offer something for sale.

Secretary CARRUTHERS. Well, Senator, if someone would tell me when OPEC is going to get reorganized and become effective again, if someone will explain gasoline prices—right now we have a 13-cent increase in gasoline. Five cents can be attributed to the new tax.

We see already indications that perhaps the energy market is beginning to pick up again. How do I know?

Senator MELCHER. You are never going to be able to predict 10 years, 15 years from now and neither am I.

Secretary CARRUTHERS. That's correct.

Senator Melcher. But the fact is there is a lot of coal out there that isn't being produced and it is under lease. It is loose coal. It is absolutely loose coal that is not even bound by the due-diligence clause until it gets to the time when the lease is up and they have to get another extension to that lease.

Secretary CARRUTHERS. Senator, one, it doesn't hurt anything to have it out there. There is no cost to have it there if no one is doing anything to it.

Senator MELCHER. No, but it leads to the continuation and the speculation and it offends the good judgment of the average citizen. Now, what I am going to suggest here is that you provide for me, at least, and for anybody else on the committee, all of the maintenance production tracts that might be necessary from the Fort Union coal sale.

I also ask that you consider not having the sale except for those maintenance production tracts.

Secretary CARRUTHERS. We will provide that for the record, Senator.

Senator MELCHER. 1982, when you said you were going to have this sale despite the best judgment of a lot of people, we talked about 1 percent growth in the electrical demand.

Synfuel plants might be necessary to have a lot of coal. That hasn't happened. And neither have we had an economic recovery that might require a lot of industrial coal, as well as export coal.

Unless these things are really going to happen, I would rather clear up this backlog of the old coal, and that is what I think maybe we should look at again.

Secretary CARRUTHERS. Senator, I totally disagree with that approach. Some of that old coal has not been under land-use planning. It is not environmentally sound to produce that coal.

I would much prefer to have coal produced from a process that assures that land-use planning has been properly undertaken; that the tradeoff with other resources has been made.

And regional coal teams including the States have been involved; that the Governors have been consulted. I would much rather produce the new coal than coal that years and years ago when we didn't have a process, somebody leased without stipulations.

Senator MELCHER. If you are so sure of that, Mr. Secretary, why don't you provide us that breakdown then, because you will have to face it every time you renew these leases——

Secretary CARRUTHERS. Senator, there is no breakdown. That is my preference, that the new coal leased under this very careful program be the coal developed.

Now, some of the old coal will be developed and that is fine. We have a contractual obligation to do that.

Senator MELCHER. But until we know how much is going to be developed, we don't know where we are at. Why don't you provide it? You are so sure of your answer to me.

Secretary CARRUTHERS. Wait a minute——

Senator MELCHER. That most of it won't be developed. Then if that is true, you must have the data.

Secretary CARRUTHERS. Senator, I don't. We have four or five estimates. I am sure of my preference that the new coal be leased. I am sure I don't want some of that old coal that has not gone through environmental analysis, that has not had public participation, that has not had gubernatorial consultation.

I am sure I would prefer—no documentation needed for this—I am sure, positive, I would prefer to have this new coal that has gone through the complete process than old coal that was leased years ago before we had any environmental conditions at all.

That does not require documentation, sir. That is my preference.

Senator WARNER. Mr. Secretary, Senator. Might I suggest we leave open the record. I am told that Senator Bumpers has departed and requested leave to have the record remain open and the record will remain open for an expeditious submission of questions by members; let's say 10 days we will leave the record open then.

Senator MELCHER. Oh, yes, Mr. Secretary, we've got some questions on Kuwait, such as what the Department is doing on the question of whether or not they are going to be treated as a reciprocal nation and what is meant by——

Secretary CARRUTHERS. Who is "they," sir?

Senator MELCHER. Kuwait.

Secretary CARRUTHERS. Kuwait, oh, I see.

Senator MELCHER. I want to know whether they will be treated as a reciprocal nation. The Secretary seems to have indicated they are not reciprocal. We've heard of a term called *de minimus*.

Secretary CARRUTHERS. I will refer that to the Secretary's office. I am unable to give you an answer to that myself.

Senator WARNER. Thank you very much.

[Whereupon, at 12:53 p.m., the hearing was adjourned.]

APPENDIXES

APPENDIX I

Attachments to Secretary Carruthers' Prepared Statement



United States Department of the Interior

OFFICE OF THE SECRETARY
WASHINGTON, D.C. 20240

MAY 17 1983

Honorable Sidney R. Yates
Chairman, Subcommittee on Interior
and Related Agencies Appropriations
House of Representatives
Washington, D.C. 20515

Dear Mr. Yates:

This letter is in response to your letter of April 20, 1983 and accompanying report by the surveys and investigations staff on the coal leasing program of the Department of the Interior. The report raises basic questions concerning the future conduct of the Federal coal leasing program and the administration of the Powder River coal lease sale of April 28, 1982. This letter will respond to these basic questions. My response is lengthy because of the importance I attach to this matter.

To begin with, the report is replete with factual errors and is filled with inconsistent and conflicting economic and other arguments. This no doubt results from the lack of any clear understanding on the part of the authors of the economic role of Federal coal leasing. The report is, in short, more emotional than analytical. The one connecting theme is a pervasive negativism about every aspect of Federal coal leasing, without any recognition of successes or of the complexity of some of the problems faced by the coal program. Numerous unnamed officials are cited throughout the report who, of course, cannot confirm or deny the accuracy of their reported views. The report entirely lacks the professionalism and objectivity which the Congress should expect of a product bearing its name, prestige and large audience. A critique of the numerous inaccuracies and technical mistakes that fill the report is attached to this letter. In the remainder of this letter, I want to address the central issues of Federal coal leasing that the report raises.

A Formula for Monopoly

The surveys and investigations staff contends there is already an oversupply of Federal coal reserves available as a result of past Federal coal leasing. According to the report, these reserves are easily sufficient to supply projected production levels well into the 1990's. Further Federal leasing, therefore, is not needed, will overload the coal markets, and depress prices further.

The report then goes on to criticize the Interior Department for failing to achieve fair market value on highly valuable Federal leases currently being sold under its leasing program. Reassignments of existing leases and preference right lease applications are said to be commanding very high prices. Large speculative gains are said to be occurring in the private sector.

The report does not recognize that these two lines of criticism are incompatible, which reflects the lack of economic sophistication evident throughout the report. If the coal market is greatly oversupplied with available reserves including Federal leases, then the fair market price of new Federal reserves will be depressed. The prices of new Federal lease reserves will also be low partly because their acquirer must develop them within 10 years -- a very uncertain prospect in a market surfeited with reserves. In addition, lease reassignments are hardly likely to obtain high prices in an oversupplied and depressed market either. On the other hand, if lease reassignments are capturing high prices, and large speculative gains are being reaped, as suggested by the staff report, there is no better evidence of strong demand for leases and the need to pursue further Federal leasing rapidly and aggressively.

I should say that the surveys and investigations staff is hardly the first to stumble in this area. Public discussion of the Interior coal leasing program is pervaded by arguments that there is no demand for Federal leases but that leases are very valuable, actively sought and the source of huge speculative gains.

We recognize that the supply of Federally leased reserves is holding down western coal prices -- and, of course, the recession has contributed some further downward pressure. Rather than a cause for concern, however, we regard these developments as a sign of success. The purpose of Federal coal leasing should be to make ample supplies of coal reserves available and to drive coal prices down to the point that any excess profits are eliminated from the system as far as possible. This is a strategy in the National interest, which will make competitive coal prices available to utilities and other coal buyers, and eventually to the consumers of the Nation.

Many people -- including the authors of the surveys and investigations staff report -- make the serious mistake of drawing analogies between the proper behavior of private coal holders and of the Federal government. Private coal owners naturally seek to make the greatest profit from their coal -- by developing it or selling it for the highest price possible. The Federal government could behave in this way too. But there is a word for such behavior -- monopoly. The Federal government owns 60 percent of western reserves and controls indirectly another 20 percent. The Federal government could maximize its profits by restricting supply and driving prices up. Although presumably not intending such a result, many current critics of Interior Department coal leasing policies are coming perilously close to advocating that the Government pursue a monopoly leasing and pricing strategy.

Seeking to Create a Competitive Market

The Government's proper objective is to create the circumstances of a strongly competitive market. This requires some ingenuity when the Government owns 60 percent of the resources in the West. It also requires overcoming the above-noted persistent habit of thinking of Federal coal holdings as though they should be managed as a monopoly.

Our strategy is to offer coal for lease, and thereby to let new entrants have access to Federal coal reserves. We want utilities seeking new coal contracts to be faced with a multiplicity of potential suppliers. A utility should be able to find a number of coal suppliers to meet its needs, even when the utility may require a special location and have fairly specialized coal requirements. All this requires that substantial amounts of Federal coal be under lease. Low prices are the result of competition in a competitive market system. Government bonus revenues may be lower, but revenues are not the primary objective; the Government must be sure that it receives fair market value but does not impose artificial supply restrictions.

At one point the surveys and investigations report expresses concern over excessive concentration of Federal lease reserve holdings in the West (p. i of summary). If this is a problem, it actually makes a very strong argument for much expanded new Federal coal leasing. Such leasing will make ample new Federal reserves available to new entrants and promote more competition. A failure to lease will simply continue any competitive advantages of existing lease holders. The Antitrust Division of the Justice Department reviews all new Federal leases to ensure that they do not contribute to any undue concentration. On many occasions, the Antitrust Division has strongly recommended more rapid leasing of Federal coal in order to promote competition in western coal markets.

The Infeasibility of an Exact Plan

There is an alternate Federal leasing strategy that would not rely on a competitive market but would still try to avoid monopoly supply restrictions. The Government could employ its coal projection models and other planning apparatus to try to calculate exactly what a competitive level of coal output would be. It would then lease exactly the right amount of Federal coal needed for western production at exactly the right Federal sites to achieve the low mining costs and produce the highest quality coal in each region. In essence, the leasing program initially designed by the Carter administration was a version of this approach; specific Federal leasing targets were set to achieve production goals established by DOE to minimize national coal production costs.

There are two fundamental problems with this strategy. First, the government's forecasters are simply not capable of the necessary

precision for this approach. Anyone familiar with the record of energy forecasting in recent years will recognize the very high uncertainties involved. Leasing decisions now are for production 10 and 20 years from now, greatly compounding the predictive problems and uncertainties. The surveys and investigations staff report itself acknowledges that projections for more than five years into the future become very speculative. The second problem is that leasing to meet an exact production level leaves no room for the competitive bargaining process necessary to achieving competitive coal pricing. If one utility must go to one coal supplier, the utility will pay much more than a competitive market price.

The Antitrust Division of the Justice Department, the Department of Energy, the General Accounting Office and the Council on Wage and Price Stability all called in 1980 for much more Federal leasing. Instead of trying to plan exactly, the Interior Department would prefer that the market sort things out. This has been the philosophy in this administration.

To sum up, more leasing will make coal markets more competitive, less leasing will make markets less competitive. Since we can never know very precisely how much to lease, which risk is preferable -- too much competition or Government monopoly leasing and pricing? I think the answer should be clear. Unlike the authors of the surveys and investigations staff report, I am not concerned about driving coal prices lower. The beneficiaries of low prices will be the American consumer.

If more Federal coal is leased than the market can handle, it will simply be returned 10 years later to the Government for lack of diligent development. The Government can then resell this Federal coal. Industry will have to discount its bids for this possibility, and the general uncertainty of development, so we should not have unrealistic expectations for bid levels with high leasing levels. On the other hand, the volume of Federal coal leased will be higher, so the grand total for all the high bids received may not be much affected. Government sale receipts could even be higher, if the volume of reserves sold is enough higher to make up for lower reserve sale prices.

Slow Leasing Rewards Past Speculators

It is particularly ironic that the report by the surveys and investigations staff complains of large speculative gains to holders of existing leases and preference right lease applications. There is no surer way to eliminate the gains of past speculation than to lease substantial new amounts of Federal coal, driving the value of coal reserves down. Efforts to limit further Federal leasing are instead almost sure to increase private speculative gains. The beneficiaries from expanded Federal coal leasing are not the coal industry; indeed, many individual members of industry who already own Federal leases will lose if further Federal leasing spurs lower coal reserve values and lower coal prices.

A failure to lease new Federal coal might also compel the development of inferior Federal coal deposits. Most of the existing Federal leases were issued in the 1960s or earlier. Industry has been picking and choosing from this inventory for the past 15 years as it opened new mines. It stands to reason that the coal leased long ago, but still not committed to any mine after all this time, is of lesser quality. Similarly, preference right lease applications are based on prospecting permits that were issued for lands outside the prime known coal areas. Thus far, more than half of the 50 preference right lease applications disposed of since 1979 were rejected or withdrawn; only 23 resulted in leases.

It is also the case that the coal leased long ago was leased with little consideration for environmental consequences -- before the passage of the National Environmental Policy Act of 1969. By contrast, the current Federal coal management program contains numerous provisions for environmental protection, including application of unsuitability criteria during land use planning and detailed studies of site specific environmental impacts at proposed coal mining locations. The coal mine sites that pass through the multiple environmental screens of the current program are likely to be much more environmentally acceptable than the sites of old Federal coal leases. Curtailing new leasing, however, will force development of the old Federal leases. Rapid new leasing not only makes good economic sense; it also makes good environmental sense.

Some of our critics seem to want a central planning procedure by which the Government examines every possible coal site in each region (Federal and nonfederal), prepares detailed analyses of the environmental and economic characteristics of each site, and then directs coal mining to the best of all the sites. While this sounds very good in theory, it would require vast budgetary and personnel resources, to say nothing of the questionable accuracy of the resulting information. Government simply is not very good at estimating matters such as the relative profitability of alternative coal mining sites. The success of the American economic system is that it leaves such calculations to the private market. That is what we propose to do in the Federal coal program as well -- first screen out and remove from consideration for leasing all environmentally problem sites, then lease coal at the remaining environmentally acceptable sites and let the market decide which of these are most economic to develop.

I sometimes like to express this concept by saying that the proper role of the Federal Government is to make wide opportunities available. The Government should not be trying to decide the final results -- that is the proper function of the market in response to economic realities.

One crude but useful measure of coal development opportunity is the level of Federal coal reserves that are already leased and are thus available for new contracting, but are not committed to any existing approved or pending mine plan. This represents the stock of

Federal coal reserves still available to new market entrants to form new mines, as well as to existing mines to expand their operations. It is thus a measure of market competitiveness. Since 1978, despite the leasing of more than 2 billion tons of Federal coal that has occurred, the total amount of already leased but still uncommitted Federal coal reserves has declined from 7.8 to 7.7 billion tons. As shown in the table below, in some individual regions the decline in uncommitted market reserves has been much sharper. In short, markets in some regions are becoming less, not more, open to new entry. In the Green-River Hams Fork region, however, new leasing has expanded the available reserves to form new mines and made the regional market more competitive.

Table 1. Levels of Leased But Uncommitted Federal Coal Reserves (millions of tons)

<u>Region</u>	<u>1978 Uncommitted Federal Reserves</u>	<u>1983 Uncommitted Federal Reserves</u>	<u>Change</u>
Fort Union	(a)	333	(a)
Powder River	3,857	3,215	-642
Green River-Hams Fork	262	912	+650
Uinta-Southwestern Utah	2,638	2,839	+201
San Juan River	303	106	-197
Other Regions	(a)	257	(a)
Federal Total	7,782	7,663	-119

(a) could not be disclosed because of confidentiality requirement.

By the Accepted Measure of the Surveys and Investigations Staff,
the Powder River Sale of April 28, 1982 Received Fair Market Value

I want to turn now to the specific question of the Powder River sale of April 28, 1982. I should say first that the conduct of this sale was not perfect -- as few things are -- and should have been more fully documented. But this should not obscure what was basically a major success. The Interior Department added substantial new reserves to the coal market and obtained fair market value for these reserves.

As in many other areas, the report of the surveys and investigations staff makes mutually inconsistent assertions on the question of fair market value. It states that the minimum acceptable bids (MABs) represented a "fully supportable and documented estimate of fair market value" (p. vii of summary). But then the report goes on to assert that the Department failed by a wide margin to achieve fair market value in the Powder River sale.

The report fails to note, however, that for the tracts actually leased, the Interior Department received total high bids 19 percent greater than the estimates of fair market value as shown in the MABs. There has been some confusion on this point because the

original MAB on one prime tract (out of 11 leased) was corrected as of May 4, 1982 by the MMS economic evaluation committee for a technical error (the overburden ratio was initially miscalculated). The surveys and investigations staff may also have overlooked this field technical correction. With the one technical correction, the sum of the MABs reported by the economic evaluation committee to Department officials responsible for bid acceptance decisions equalled \$55.3 million for the tracts sold in the Powder River region. Yet, the sum of the high bids accepted by the Interior Department was \$65.8 million. In short, I am mystified to find it alleged in the staff report that the high bids accepted by the Interior Department for seven tracts were in total \$60 million below fair market value.

After the Minerals Management Service calculated its original MABs, the Interior Department chose to publish "entry level bids" prior to the sale. These entry level bids were based in part on the original MABs: the entry bids were lower than some of the original MABs, equal to others, and higher than one. There has been wide criticism of the way in which the entry level bids were obtained. I agree that our rationale could have been better explained. But the Department did receive fair market value, partly because the Department rejected the high bid for a prime tract (Rocky Butte) where the bid for this tract exceeded the entry level requirement. The entry level requirement was just what it suggests -- the minimum bid that the Department would consider but not necessarily accept.

The surveys and investigations report expresses dismay at the lack of competition for many of the coal tracts offered in the Powder River sale. We share this concern, especially with respect to bypass tracts and tracts required to maintain existing operations. These tracts do pose some of the most severe problems for the coal program. It is unrealistic to expect much competition where one coal company is the only likely user of the coal. It is also difficult to calculate the value of the coal when there is no real prospect of another user or of market competition. Fair market value in such circumstances becomes difficult to define. The Interior Department has wrestled with these problems for many years, over several administrations. I would merely note at this point that the Department followed scrupulously its existing procedures for the leasing of maintenance and bypass tracts. These date back to 1980 and the fair market value procedures established by the previous Administration.

The staff report suggests that Wyoming and Montana are unhappy with the tract values received in the Powder River lease sale -- citing an unnamed official to this effect. However, neither State has raised any such objection publicly. Indeed, the State of Wyoming has joined with the Interior Department to defend the Powder River sale -- including the receipt of fair market value -- against a legal challenge brought by the National Wildlife Federation, and others.

Like other states, Wyoming and Montana will receive 50 percent of the revenues from Federal coal leasing in those states. Together, all parties could expect more than \$1 billion eventually in bonuses and royalties, if all tracts sold in the Powder River sale are developed. The royalties will far exceed the bonuses; indeed, the coal leasing program seeks to obtain most of the revenues from royalties. This policy reduces the front-end commitments, thus avoiding giving larger corporations an advantage, and spreads the risk of uncertain future coal prices between the coal company and the Government. The states will also receive large additional revenues from their own severance and other taxes.

The surveys and investigations staff report criticizes the low percentage of revenues returned to the Federal Government from Federal coal leasing. As in many other instances, the report deals with this issue inaccurately. Contrary to the report, the 40 percent of Federal leasing revenues going to the Reclamation Fund is deposited in a Federal account. Expenditures from the Reclamation Fund require explicit Congressional appropriation, and are not returned in any direct sense to the State of origin. For practical purposes revenues going to the Reclamation Fund are Federal revenues. Finally, the revenue distribution from coal leasing is, of course, controlled by Congress through statute; it is not a policy decision of the Interior Department.

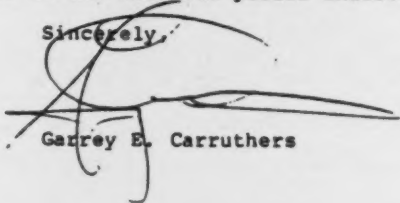
The surveys and investigations staff report also suggests that the Department is indiscriminately exchanging one coal lease for another upon request. This simply is factually inaccurate. The Department has no discretionary authority to exchange one coal lease for another. All coal lease exchanges completed or in progress to date have been authorized or mandated by Congress in statute (Public Laws 95-554, 96-401, 96-475). In particular, Public Law 96-475 required the Department to issue coal leases from within a specified area in exchange for existing leases in the Bisti wilderness study area in northwestern New Mexico. The Department is merely complying with the stated wishes of Congress in carrying out coal lease exchanges.

In conclusion, I am pleased with the progress of the coal leasing program in the past years. Despite the many criticisms, I believe the actions taken have done much to serve the long-term interests of the American consumer. The Department has moved toward the creation of a truly competitive coal market in the West and has received fair prices for its leases sold.

I regret that the surveys and investigations staff has chosen not to provide a serious professional examination of the Federal coal leasing program. There are, of course, important policy issues in the management of Federal coal and many legitimate points of disagreement. The Federal coal program is and always will be

evolving, as we learn from experience. It does not help, however, to have a widely publicized report that is filled with inaccuracies, shows ignorance of elementary economics, and whose principal thrusts would do damage, if inadvertently for lack of understanding, to the American consumer and to the broadest public interest.

Sincerely,



Garrey E. Carruthers

cc: Full Committee

Inaccuracies, Errors and Other Deficiencies in
the Report of the Surveys and Investigations Staff
on the Coal Leasing Program of the
U.S. Department of the Interior

Summary

p. i. -- The suggestion that the Interior Department is exchanging one coal lease for another coal lease on its own initiative is wrong. The Department has no general statutory authority for such exchanges. Each such exchange must be specifically authorized by Congress--as in alluvial valleys. Any coal lease exchanges completed or in progress to date were specifically authorized or mandated by statute (P.L. 95-554, 96-401, 96-475). This suggestion is repeated on page ix.

p. i. -- The number of leases currently being mined (111) is not meaningful. More meaningful is the number of leases in operating mine plans, which is higher. In fiscal 1981, while only 105 leases had production, 194 leases were included in mine plans from which Federal production had occurred. In any given mine plan, only a small part of the mine area is mined at any given time. Thus, an operating mine may have several leases, but only one may be mined in a given year.

p. i. -- The assertion that the Department arbitrarily reduced the fair market value appraisals by one half is false. The presale estimates of value, or minimum acceptable bids (MAB's), were not changed except to correct for an error in calculation for the Spring Draw tract. The Department subsequently established entry level bids as the floor bids for the tracts rather than using the MAB's. In some cases, the entry level bids were equal to the MAB's, in some cases they were lower, and in one case it was higher.

p. i. -- Although the Treasury general fund receives only 10 percent of leasing revenues, the 40 percent going to the Reclamation Fund is also deposited with the Treasury. These Funds require specific congressional appropriation and therefore are Federal revenues. There is no direct connection between deposits to the Reclamation Fund and appropriations for Federal reclamation projects. The formula for the distribution of onshore mineral leasing revenues between the States and the Federal Treasury is set by law and is not subject to Departmental discretion.

p. ii. -- Federal coal leasing revenues deposited in the Reclamation Fund are not returned to the state in which the coal was mined. There never has been any such distribution requirement and none has been recently proposed. The report appears to confuse the Reclamation Fund for western water projects with the more recent fund established to reclaim abandoned mine lands.

p. ii. -- The error from page i on distribution of receipts to the Federal Government is repeated.

p. ii. -- A program to lease Federal coal did not exist in the 1800's. The coal leasing program was established by the Mineral Leasing Act of 1920.

p. iii. -- The final EMARS program (EMARS II) was an acronym for Energy Minerals Activity Recommendation System (not Allocation).

p. iv. -- The total original appraised values of the 13 tracts offered in the Powder River sale was \$108 million (i.e., greater than \$100 million as asserted). However, two tracts received no bids. Removing these, the total original appraised value was only

\$95 million. Furthermore, a technical error had been made on the overburden ratio for the Spring Draw tract. Simply correcting the arithmetic for this error, the total appraised value (using presale methods in all respects) was \$55 million. This correction was reported by MMS field personnel as of May 4, 1982. In addition, although 11 tracts received bids, one bid was rejected. The tract was reoffered and the bid was doubled. The total of the accepted bids for the 11 tracts was \$65.8 million, over \$10 million more than the appraised value.

p. v. -- Throughout the report the Assistant Secretary for "Land and Water Resources" is misnamed as the Assistant Secretary for "Land and Water".

p. v. -- The Deputy Assistant Secretary never directed that the minimum acceptable bids be "reduced." He coordinated the establishment of entry level bids separate from the minimum acceptable bids.

p. viii. -- The statement that the Government received \$46.5 million less than fair market value assumes that the presale evaluation (MAB's) equal fair market value (while throughout the report criticizing the presale evaluation procedures used by the Department) and ignores the error in calculation that overvalued the Spring Draw tract by \$40 million.

p. ix. -- The summary here asserts that almost all lease holders are reaping large capital value gains in lease reassignments. Recent sales in several cases have involved large losses to previous lease purchasers. Cities Service Company recently sold a tract for \$22 million which it had purchased in 1980 for \$68 million.

p.xii -- There is no definite or announced plan to lease 6 billion tons, although this figure lies within a broad range of possibilities.

I. Introduction

p. 1 -- The calculation of Federal reserves does not account for the Federal reserve base lying outside the six main Federal coal states.

p. 2 -- The figures of 99 percent and 89 percent cited for Federal coal ownership in Wyoming and Montana in the Powder River Basin are far higher than any other published figures. The 1979 Interior coal program EIS estimates Federal ownership in the Powder River Basin to be 80 percent for both states together.

p. 3 -- The company's name is Consolidation Coal Company, not Consolidated.

p. 4. -- Fairness would require noting that the Antitrust Division of the Justice Department closely monitors concentration of ownership of Federal reserves and has publicly stated that no problem exists.

p. 4. -- The last sentence should read: "... 111 leases were actually mining coal in the year ending September 30, 1982." A total of 205 leases have produced coal at some time in the past.

II. The Coal Program

p. 5. -- To correct the figures given, the Union Pacific Land Grant was in 1862. The Northern Pacific Land Grant was 40 miles wide in states and 80 miles wide in territories.

p. 6. -- Prospecting permits allowed permittees to explore for coal in areas where the presence or workability of coal was not previously known. If permittees discovered coal in commercial quantities as a result of exploration during the terms of the permits, then they could apply for preference right leases. Prospecting permits were never termed preference right lease applications; they were two different documents.

p. 6. -- The National Environmental Policy Act was passed in 1969. The text to the contrary, it was not passed in the 1970s and it was not titled the National Environmental Protection Act. The Act is misnamed throughout the report. The requirements for preparation of an EIS are misstated. An EIS must be prepared for major Federal actions significantly affecting the quality of the human environment.

p. 6. -- There is no law known as the Mineral Leasing Act Amendments of 1975. Apparently, the reference intends to mean the Federal Coal Leasing Amendments Act of 1976. The report implies that there were two separate laws.

p. 6. -- The 10 year "clock" applied immediately only to post-1976 leases, not "all" leases. Congress intended to apply the 10 year "clock" to pre-1976 leases upon the first readjustment of those leases after 1976, according to the legislative history of the FCLAA.

p. 6. -- The Act specified a minimum royalty rate for surface mined coal of 12.5 percent of the value, not cost, of coal produced.

p. 7. -- The discussion of the provisions of the Federal Coal Leasing Amendments Act intermixes the Act itself with subsequent implementing regulations. For example, the 2.5 percent and 1 percent requirements for commercial quantities were set by regulation in May 1976, not by the law itself as suggested. The June 1, 1986, diligent development date was promulgated in regulations in May 1976 and not in the Act.

p. 7. -- The change in revenue distributed applied to bonuses as well as to royalties and rents.

p. 8. -- The report confuses the requirements for surface owner consultation with those for consent contained in the Surface Mining Act. The report also confuses the requirements of the Act with those of the implementing regulations. For example, the Act requires consultation, not consent, during land use planning. The 1979 rules, not the Act, made a surface owner's preference against mining during consultation (not consent) effective for the life of the land use plan.

p. 9. -- NEPA applies to major Federal actions.

p. 9. -- The NRDC suit was filed against the Final Programmatic EIS, released in September 1975 -- not against the draft released in 1974.

p. 10. -- Processing (but not issuance) of preference right leases was tightly restricted under the NRDC settlement. Only the 20 least environmentally sensitive preference right lease applications could be processed under the settlement.

p. 11. -- The Department does not have the authority to grant a coal lease "... for a more minable tract." in exchange for a preference right lease.

p. 11. -- The royalty rate is not less than 12.5 percent and is only for surface mined coal. It applies to the value of the coal, not "cost."

p. 13. -- Payment of advance royalties is allowed in lieu of continued operations. However, a lessee must achieve diligent development first.

p. 13. -- Contrary to the suggestion, the advance royalty requirement is set out in the FCLAA. Interior has no discretion in its use except for determining the amount of the advance royalty.

p. 17. -- The former MMS officials cited are all unnamed; many other former MMS officials hold contrary views.

p. 18. -- The market by itself succeeded greatly in inducing development of Federal coal in the 1970s. Federal coal production rose from 7 million tons in 1967 to 116 million tons in 1981.

p. 18. -- The 1979 coal regulations address economic issues throughout (e.g., maximum economic recovery, production goals, etc.)

p. 18. -- Economic principles were applied throughout discussions of fair market value; it would be impossible to do otherwise.

p. 19. -- The Department of Energy did not push for stricter diligence standards than Interior. Energy first promulgated the proposed diligence relaxation eventually adopted by Interior.

p. 19. -- The 12.5 percent royalty is a statutory minimum for surface mined coal, not a product of Interior regulations.

p. 19 -- The 1979 rules are not litigation-free except for the Texaco and NCA suits. The current NRDC and NWF suits challenge portions of the 1979 rules left unchanged by the 1982 revisions.

p. 19. -- No one has seriously proposed separate coal regulations for each region.

p. 19. -- No relevant oil and gas regulations were being drafted in 1979.

p. 20. -- The diligence regulations for pre-FCLAA leases were first issued in May 1976, three months before passage of the Federal Coal Leasing Amendments Act, and were not changed by the 1979 regulations. The 1982 revisions were made to conform the diligence rules for pre-FCLAA to the intent expressed in the Legislative history.

p. 20. -- Advance royalty provisions were also first set in 1976, not 1979.

p. 21 -- Royalty rate reductions were authorized by Section 39 of the Mineral Leasing Act, not by FCLAA or the 1982 rules.

p. 21. -- Information on industry interest is sought early in order to avoid coal related studies of land in which there may be no prospect of coal development. Receipt of industry interest information does not create a presumption in favor of coal development. Industry most definitely does not "sponsor" tract selection.

p. 21. -- The presumption that a surface owner is unqualified is made only if the surface owner refuses to submit evidence of qualification and Interior cannot independently determine that the surface owner is qualified. Interior may certainly correct errors or defects.

p. 22. -- The 1982 definition of MER required only the mining of profitable coal seams. This is no change from 1979.

p. 23. -- Leasing targets never have been determined by "econometric models," nor are leasing levels now determined by "corporate dictate." Leasing levels are determined through an analysis of factors such as U.S. coal production goals and projections of future demand, expected production from existing coal holdings, consideration of natural energy needs, and advice from governors of affected states, as well as industry expressions of interest in coal development and the demand for reserves.

p. 26. -- The key decisions for fiscal 1983 and 1984 coal lease sales have been and are being made in close consultation with western state governors and regional coal teams.

III. The April 1982 Powder River Basin Sale - A Case Study

P. 34 - While the total high bids were \$55 million in the April 28, 1982 sale, it should be noted that one high bid -- \$11.2 million for the Rocky Butte tract -- was rejected. On reoffering, this tract brought a bid of \$22.3 million, which was accepted. Thus, the correct figure for the total high bids for the tracts offered on April 28, 1982, is \$65.8 million.

P. 35 - It should be noted that a definition for "fair market value" becomes highly ambiguous when there is only one potential seller and buyer. In the private sector such circumstances generate bargaining that has no precisely determinate result. It is unrealistic to expect the Government to have an exact calculation either.

P. 36 - There were other new elements as well in the Powder River sale. The Powder River coal sale was also the first to plan to use the intertract bidding coal sale procedure. Ultimately, this procedure had to be dropped when not enough surface owner consents could be obtained.

P. 36 - The April 27, 1982, Departmental procedures required a new post-sale estimate of fair market value for tracts not demonstrably competitive or for maintenance tracts. Such new estimates of fair market value were in fact made for the October 1982 Powder River sale for the Rocky Butte and Fortin Draw tracts. This approach used bidding results from the sale itself to establish an up-to-date comparability standard, reflecting current market conditions.

P. 38 - Although the switch was made to post sale appraisals, these post-sale appraisals would still be conducted by the MMS field

technicians. Despite the suggestion, there was no diminution of their role.

P. 38 - The MMS decision not to use the higher comparability evaluation results partly reflected changed market conditions from 1980 to 1982. In fact, one comparable tract used had sold in 1980 for \$68 million. In 1982, this same tract sold for only \$22 million. Hence, if anything, the 1982 values based on the 1980 comparable tracts may well have been too high.

P. 39 - Despite the suggestion, the change to post-sale analysis reflected a general lack of confidence among most Interior professional economists, as well as other evaluation specialists, in the comparability standards obtained from only two 1980 reassigned leases.

P. 39 - The report fails again to note that one of the 1980 tracts used for comparability analysis was resold in 1982 for less than one-third its 1980 sale price. This strongly supports the wide skepticism shown in the Department as to the results of presale analysis based on such sketchy 1980 data.

P. 42 - Table 8 contains an incorrect figure for the Spring Draw tract. The figure of 16.2 cents per ton was the original calculation, which was in the MABs presumed to have been leaked to outside parties. However, the MMS Economic Evaluation Committee subsequently discovered an overburden ratio error which reduced the tract evaluation to 3.96 cents per ton. This error and correction were explained in the "Report of the Economic Evaluation Committee," May 4, 1982 on the "Powder River Basin Lease Sale Post-Sale Analysis." The surveys and investigations staff should have a copy of this report.

P. 43 - In Table 9 the incorrect early figure of 16.2 cents per ton, rather than the corrected later figure of 3.96 cents per ton, is again shown for the Spring Draw tract.

P. 44 - The report does not note that the reduction of tract value by 50 percent was an effort to simulate the results of a bilateral negotiating situation. The procedure was established in 1980 and was closely followed in the Powder River sale.

p. 44. -- The report fails to acknowledge that the MMS, in providing reevaluations of the maintenance tracts to the investigative staff using assumptions provided by the staff, expressed doubts about the legality of the reevaluations under the Uniform Appraisal Standards handbook and reservations about the validity of the assumptions used by the investigative staff. In the interest of fairness these concerns should at least be mentioned.

P. 45 - The values shown in Table 11 seem to assume that the Federal Government captures all the rent from a tract adjacent to an existing operation. This would not be the result in a market negotiation, where the rent would somehow be split as a result of such negotiation. It would thus not represent fair market value.

P. 46 - Most of the asserted \$46 million in accepted bids less than fair market value comes from the Spring Draw tract. However, the report fails to account for the overburden error as corrected by MMS as of May 4, 1982.

P. 46 - The allegation that the bids for the Little Rawhide and South Duck Nest tracts were too low seems to assume that government should capture all the rent. This would not be a normal market

result in a bilateral negotiation (sellers do not capture all rents or profits from buyers) and thus is not an accurate representation of fair market value.

P. 46 - The \$60 million figure does not represent fair market value because of MMS calculation errors not accounted for and because it assumes that Government captures all rents and profit, above the normal rate of return on the Little Rawhide, South Duck Nest, and Montana maintenance tracts. Such 100 percent capture is not the result of a normal market process and does not represent an accurate portrayal of fair market value.

P. 46 - The use of unsupported and unattributed quotes by unnamed "officials" is especially dubious in light of the numerous inaccuracies of those elements of the report that are verifiable, and especially where such serious accusations as "scandalous" are made.

P. 47 - Despite the repeated inflammatory assertion, the minimum acceptable bids were not "reduced." The introduction of entry level bids introduced a brand new element in the sale procedure. Subsequently, the high bid for the Rocky Butte tract was rejected, even though it exceeded the entry level bid, showing that the Department did not necessarily consider the entry bid to be fair market value.

P. 49 - A visit to the Powder River Basin is an irrelevant criterion in deciding whether an economist can make sound judgments on evaluation issues. The same holds true for speaking with energy company officials.

P. 50 - Market competition includes potential competitors as well as actual bidders. Hence, as long as no barriers to potential competitors exist, the fact that only a single bid was submitted does not mean that there was no competition.

P. 51 - The fair market value estimate for Little Rawhide was not reduced to 8 cents per ton. The 8 cent figure refers to the entry level bid, which was not a fair market value estimate.

P. 52 - In the March 25 memorandum quoted, "acceptable" is being used in a different meaning, as "willingness to receive and further consider a bid," not as "willingness to accept the high bid as fair market value."

P. 52 - The full post-sale evaluation procedures were not adopted until signed by Under Secretary Hodel on April 27, 1982.

P. 52 - The total of the accepted high bids for the eleven tracts exceeded the total presale minimum acceptable bids, with the necessary correction made for the Spring Draw overburden error -- as corrected by MMS as of May 4, 1982.

P. 54 - The Table does not show the properly corrected figure for the Spring Draw tract estimate of minimum acceptable bid.

P. 56 - Contrary to the suggestion, competition is increased when an existing operator adds further contracting capacity, even if he already has some capacity.

P. 56 - Inconsistently, the report acknowledges that some existing operators will be more able to compete with other operations because they have added further needed reserve holdings.

P. 56 - Nine of eleven tracts offered actually received bids higher than the presale minimum acceptable bids.

P. 57 - It was not an error but due to proposed inclusion in the intertract sale that the Cook Mountain tract had an entry level requirement of 2.5 cents per ton. All tracts proposed for sale by intertract procedures were given the same entry level bid. Interior is not "amazed" by the sale of the Cook Mountain tract at that price so much as we are amazed by the continual equation of the presale minimum acceptable bids and fair market value by the Surveys and Investigations Staff in the face of such "amazing" sale results.

P. 57 - To the contrary, Shell could be considered a loser by some in paying 8 cents per ton for a tract that the corrected presale minimum acceptable bid showed ultimately to be worth 3.96 cents per ton.

P. 57 - The bid for the Rocky Butte tract was rejected because it was below fair market value as shown by both presale and postsale analysis, even though it exceeded the entry level bid. The use of term "for some reason" reflects a refusal to concede the demonstrated fact that entry level bids were not an estimate of fair market value:

P. 57 - It should be noted that some of the tracts with \$25 per acre minimum acceptable bids had in fact been fully evaluated, but had showed negative values.

P. 57 - Normal professional standards would require that a consultant's work be documented and made available for review. It is difficult, otherwise, to respond to unsubstantiated assertions by anonymous consultants.

P. 58 - The 80 percent figure is offered without any substantive support.

P. 58 - The assertion of one unnamed Wyoming official about low values is contradicted by the fact that the State of Wyoming has joined with the Interior Department to defend the Powder River sale results, including the receipt of fair market value, against a legal challenge by the National Wildlife Federation.

P. 58 - A negotiated sale could hardly be classed as a form of competitive bidding.

P. 59 - There is no reason that an "unexpected" bidder should not be considered a "legitimate" bidder.

P. 60 - While competitive bidding is difficult for tracts adjacent to existing mines, this same problem also greatly complicates the determination of fair market value.

P. 60 - The use of an anonymous "noted coal economist" should not be necessary. If professional qualifications are being asserted, the economist should be identified.

P. 64 - The report fails to distinguish between useful speculation as seen by the Justice Department and "blatant speculation" which is said to be bad.

P. 64 - It should be noted that for at least half the coal acreage leased in any one year, a deferred bonus is a statutory requirement, not an Interior policy.

P. 64 - The report should note that the use of deferred bonuses and royalties reduces up-front financial commitments and therefore encourages wider participation by smaller operations.

P. 65 - The \$100 per acre requirement was established prior to October 1982.

P. 66 - The leasing moratorium ceased to be relevant for prospecting permits in 1976 when statutory authority to issue them was eliminated.

P. 66 -- NEPA did not define commercial quantities. Interior defined the term in rules published in May 1976 to take into account, among other things, the costs of complying with environmental protection measures.

P. 70 - Contrary to the report heading, as in fact noted in the text, most preference right lease applications are located in Wyoming and New Mexico.

P. 74 - So far, contrary to the suggestion here, less than 50 percent of the preference right lease applications processed to resolution have resulted in lease issuance.

P. 74 - Contrary to the text, NRDC vs. Hughes did not deal with the issue of the validity of prospecting permits or with Interior's authority to cancel permits.

P. 74 - Contrary to the suggestion, the Secretary has not had any authority to issue prospecting permits since passage of the FCLAA in 1976.

P. 76 - Once again, the assertions here are rebutted by the record of substantial attrition in the processing of PRLAs.

P. 78 - The 45-billion-ton figure refers to in-place resources, and translates to 17.4 billion tons of recoverable reserves.

P. 78 - The Federal Coal Leasing Amendments Act was passed in 1976, not 1978. The 1978 Law, Public Law 95-554, did not have a name.

P. 81 - Lease assignments serve useful purposes, including getting lease holdings into the hands of parties able to make the best use of them.

P. 82 - There is no indication whether all those sales of coal reserves involve Federal coal.

P. 82 - The heading suggestion of "enormous profits" is contradicted by the revelation in the text that many reserve holdings are now falling in value.

P. 82 - A tax writeoff normally does not make up fully for direct losses incurred. If otherwise, an explanation is needed.

P. 83 - Diligent development was first defined in May 1976 by regulation. Regulations issued on December 29, 1976 gave the first regulatory diligence definition for post-FCLAA leases, but retained the May 1976 definition for pre-FCLAA leases.

P. 86 - The report should also note that diligence requirements reduce the value of Federal leases and thus their fair market value.

P. 87 - Analogies with the behavior of private coal holders are fallacious. If the Federal Government pursued a private profit strategy, the results would be monopoly supply restrictions and artificially inflated prices.

P. 89 - Even if Federal lessees could meet diligence requirements by 1991, that does not mean that production from those leases is warranted. Unleased Federal coal may be economically and environmentally superior to existing Federal leases.

P. 90 - Those who hold Federal coal leases pay a price in having their money tied up with no interest. The increased capital value of the coal makes up for this loss -- in effect, the capital value increase might be considered a substitute for an interest payment. The report provides no information as to what the surveys and investigations staff considers to be the coal industry's share of the cost or risk of holding Federal coal leases.

P. 90 - Surface owner consent problems arise as much or more from statutory provisions as from management decisions.

P. 93 - Much of the coal outside the Northern Great Plains sells for higher than \$20 per ton FOB.

P. 96 - The price of oil has not yet generally fallen "well below \$30" per barrel.

P. 97 - If the price of Powder River coal has fallen from \$12 to \$7 per ton, fair market value estimates for Federal coal leases should reflect corresponding or even greater percentage declines, contrary to suggestions earlier in the report.

P. 97 - Development of an export market would add to demand, not reduce it.

P. 99 - The section on transportation omits mention of the potential of slurry pipelines to create competition for the railroads.

P. 100 - The statements here of the uncertainties of projections is inconsistent with other parts of the report which seem to suggest leasing only to supply clearly identified needs.

P. 104 - The final DOE production goals were released in 1980, not 1981.

P. 106 - Leasing levels no longer seek to match leasing with specific demand projections.

P. 107 - The text makes "overcapacity" sound like a problem. For U.S. coal consumers overcapacity results in low prices and readily available supplies. Given the unpredictability of demand, it is desirable to maintain overcapacity at any given time. Currently, total "overcapacity" for all industrial production in the U.S. exceeds 30 percent nationally.

P. 109 - Lack of new leasing would drive up prices by forcing development of higher cost mine sites.

P. 109 - The possible ability to produce from a lease does not mean that this lease should necessarily be produced in competition with other potential production sites.

P. 110 - Production potential from undeveloped leases and PRLAs is considered in establishing leasing levels.

P. 110 - The national coal model did not supply the "locations" for coal leasing, only a regional production goal.

P. 111 - Contrary to the text, the justification for leasing was mandated by a Federal district court, not the Supreme Court.

P. 111 - Interior never proposed to lease ton-for-ton in response to future demand projections. There was always -- even "in theory" -- ample latitude for other considerations.

P. 116 - "Overleasing," or more properly the leasing of additional Federal coal, will drive prices down. This is not a distortion but a desirable consequence of a competitive market.

P. 117 - Inventory costs for holding nonproducing reserves will be low. The bonus payment is a sunk cost that should not affect future output and pricing decisions.

P. 117 - The low prices from extensive leasing are desirable, not a problem. The text seems to be suggesting monopoly restrictions on supply.

P. 118 - The term "flooded" has no valid economic meaning. There is no reason fair market value cannot be obtained under an accelerated leasing effort. Individual leases may bring less, but more will be leased. Nonproducing leases will return to the Government after 10 years.

P. 118 - In the past 12 years the Interior coal program has had 10 years of planning and two years of leasing. More planning hardly seems the answer.

P. 118 - The States of Wyoming and Montana supported the leasing levels in the Powder River sale and have been closely consulted on future sales -- as have other affected states.

P. 119 - The suggestion in the text is to defer sales until 1984. The current debate in fact concerns five (not three) planned sales in 1984.

P. 120 - Contrary to the text, there are no plans to offer 5 billion tons of coal in the 1984 Powder River sale. The leasing level ranges from 1.2 to 4.85 billion tons and the Department anticipates the leasing of about 1.8 billion tons.

P. 121 - Again, the term "flooding the market" has no economic content. What is too much competition, too many potential sources of supply? If the market cannot absorb the supply, it will be returned to the Government for failure to be diligently developed. All bonus and rental payments will be retained and the coal can then be reoffered and, if sold, generate new bonus and rental revenue.

P. 121 - The various royalties and severance taxes must also be factored in when considering possible failure to account for external environmental costs. It is equally possible that the price structure "under allocates" western coal.

Appendix C, p. 3 -- NEPA provides no authority to control any action on environmental grounds.



United States Department of the Interior

OFFICE OF THE SECRETARY
WASHINGTON, D.C. 20240

MAY 17 1983

A Memorandum to All Members of the House Appropriations Committee, U.S House of Representatives

On May 13, 1983, the House Interior Appropriations Subcommittee approved an amendment in conjunction with the 1983 supplemental appropriations bill which would place a moratorium on future coal leasing. Several members have inquired regarding what impact this amendment would have.

The amendment reads as follows:

"None of the funds in this or any other Act shall be expended for the sale or lease of coal on public lands."

Several members on the House subcommittee reported that they understood that the amendment would only defer the FY 1983 lease offerings but this is not the case. The language would place a permanent moratorium on the coal leasing program until further legislation were implemented at some later date allowing for a resumption of leasing. Adoption of this amendment can have severe adverse consequences. We understand that an amendment may be offered to make the moratorium last only until the end of fiscal year 1983. We also oppose this more limited moratorium.

Adverse Consequences of a Moratorium

The amendment would not only bar leasing for new mine production but would also prohibit emergency leasing to avoid bypass of coal or to maintain an existing mining operation. Issuance of preference right leases also would be precluded under the amendment. The issuance of a preference right lease is a matter of legal right for those who can show a sufficiently valuable deposit under applications made 10 or more years ago. In 1979 the Interior Department made a commitment to complete the processing of these applications by 1984.

The amendment would also bar coal exchanges required by other legislation. For example, the Interior Department is under explicit Congressional direction to complete exchanges for coal leases in the Bisti Wilderness Study Area of New Mexico and to provide exchange leases for coal rights for which mining is prohibited by the alluvial valley requirements of the Surface Mining Control and Reclamation Act of 1977.

If Federal coal is bypassed due to a leasing moratorium, there could be a permanent failure to recover Federal coal near existing mines. Because of interspersed land ownership patterns, scattered Federal coal tracts may be bypassed by existing mining operations. Even a temporary moratorium on leasing in the Fort Union region could result in the bypass of two tracts with more than 46 million tons of recoverable coal reserves. These tracts are already in approved mine plans for operating mines and recovery of the coal must begin before the end of fiscal 1983 to avoid being bypassed. In 1978, the Lasson Mine in Divide County, North Dakota, bypassed 80 acres of Federal land with 587,000 tons of coal because of the Federal Government's failure to lease. In this instance, not only did American consumers permanently lose the coal, but the Treasury also lost \$700,000 in foregone royalties.

Energy development is critical to America, consumer interests, national defense interests and the advancement of international affairs. Coal development can assist in the strengthening of America through the creation of jobs and economic security, fuel for industry and for electricity to heat and cool our homes, hospitals, and schools. Coal can also contribute, through exports, to our balance of trade. The Federal Government, through sound management of its coal resources, can make a major contribution to American energy independence.

In terms of western coal resource ownership, the Federal Government is close to a monopolist. In the West, over 80 percent of the coal is controlled by the Federal Government: 60 percent through direct ownership and 20 percent because of interspersed land ownership patterns. Of the Federal lands which contain 200 billion tons of coal reserves, only 18 billion tons have been leased to supply the American consumer. One should also recognize that most of the coal which has been leased was leased prior to 1970 and consequently did not have the strong environmental planning and protection associated with current leasing activities. The Congressional Office of Technology Assessment estimates that as much as 4 billion tons of the currently leased coal is unlikely or unable to be produced under current standards. Of the 18 billion tons under lease, 9.7 billion tons are already committed to approved or pending mine plans.

The Interior Department has responsibility for leasing Federal coal lands and has developed an environmentally sensitive and economically sound leasing program. The Federal Coal Management Program is designed to give the Nation a greater assurance of being able to meet its national energy objectives, provide a means to promote a more desirable pattern of coal development with environmental protection, assure that State and local governments participate in decisions about where and when Federal coal production will take place, and increase competition in the coal industry.

Through the Federal Coal Management Program, coal leasing and development are being done in an environmentally sensitive manner which minimizes the economic and administrative burden on both the

public and the Government while assuring a fair return to the Treasury for use of the Nation's coal resources.

The Interior Department Received Fair Market Value in the Powder River Sale

Recent reports of the surveys and investigations staff of the House Appropriations Committee and of the General Accounting Office have asserted that the Interior Department did not receive fair market value for Federal coal leases sold in the Powder River Basin in a sale on April 28, 1982. These conclusions are reached, however, by second guessing the assumptions and economic methods of the professional field appraisers of the Interior Department.

In fact, the Appropriations Committee investigative staff reported that the original minimum acceptable bids (MABs) calculated by Interior appraisers were a "fully supportable and documented estimate of fair market value." The sum of the MABs for leases offered in the April 28 Powder River sale and then sold was \$55.3 million. The high company bids accepted by the Interior Department equalled \$65.8 million, exceeding the MAB estimates of Department appraisers by 19 percent. These calculations include a correction in the MAB for the Spring Draw tract reported by the Department field appraisers as of May 4, 1982. This correction was discussed extensively in the Appropriations subcommittee hearing of April 27, 1983. Although no mention of this correction is made in the Appropriations investigative committee report, the GAO report acknowledges and accepts it.

The GAO report then makes a further correction on the Spring Draw tract. This correction was not discovered until several months after the Powder River sale and after bid acceptance decisions had been completed. Using GAO's final figures, the total high bids accepted by the Interior Department equalled 95 percent of the final appraised values developed by Interior's field professionals.

The GAO statement that the Interior Department did not receive fair market value in the Powder River sale is based on GAO's respecification of Interior appraisal models. The grounds for this respecification involve technical disputes among professionals as to the most appropriate method to estimate tract value. For example, GAO asserts that no adjustment should be made for the projected size of a coal mining operation in making a comparability analysis. Interior field appraisers assert that, while such adjustments require professional judgment, they are a necessary element of a valid appraisal.

It is GAO's responsibility to raise any technical issues it finds as to appropriate ways of estimating fair market value. However, it is altogether a different matter to come in after-the-fact and second-guess the Interior professional appraisers for their calculations in a past sale. Different appraisers will always obtain somewhat different results. Appraisal problems were greatly complicated in the Powder River sale by the small amounts of

private coal in the region and the absence of Federal leasing during the 12 previous years.

In fact, Interior appraisers were able to find only one comparable tract. This tract, which sold for \$68 million in 1980, subsequently sold for \$23 million in 1982 (after the Powder River sale). Although GAO knew of this decline in the value of the comparable tract, it did not factor it into the GAO revised calculations of fair market value.

The recent report of the Inspector General concludes that, contrary to earlier belief, Interior tract value data was not leaked to industry prior to the Powder River sale. Neither the General Accounting Office nor the Inspector General were able to find any evidence that leaked data affected the bidding or the final results of the Powder River sale. The Inspector General's report was provided to the Subcommittee. Admittedly, the Interior Department erred in not launching its own investigation earlier. The Department is currently reexamining its procedures to provide tighter controls against the possibility of leaks and automatic referral of any indications of the possibility of a leak to the Inspector General.

The Interior Department also could have provided better documentation for its adoption of an entry level bidding system prior to the Powder River sale. Under the procedures adopted, the entry level bid was intended to avoid setting a minimum bid level at such a high level that the Interior Department could never discover the extent of market demand for leases. The entry level bid was not intended to represent fair market value and the high bid for the Rocky Butte tract was subsequently rejected, even though it exceeded the entry level requirement.

After the Powder River sale was completed, there was less bidding competition than expected. Hence, the Department could not use the sale results for comparability analysis to the degree expected. The fallback benchmark for bid acceptance then became the MABs prepared by Department field appraisers. Both the Appropriations Committee investigative report and the GAO report failed to acknowledge that the MABs of the field appraisers provided the ultimate basis for Interior bid acceptance-rejection decisions. This was testified to in Subcommittee hearings and documentary evidence was provided to the Subcommittee. A copy of the May 4, 1982, post sale evaluation report is attached to this letter for your confirmation of this important fact. The most salient element of the report is found in paragraphs 3, 4 and 5 of the first page where recommendations for bid acceptance are made on the basis that, "...those bids meet or exceed our pre-sale estimate of value and post-sale analysis has not altered any of those values."

In summary, the Interior Department could have improved the conduct of the Powder River sale in several respects, but the Department did receive fair market value as estimated by professional field appraisers and pursuant to established procedures. We will conti-

nue to review and improve the technical appraisal procedures and make adjustments as we gain experience from additional leasing.

The Importance of Continued Leasing

It is unfortunate that, because of the controversy generated by the Powder River sale, the Committee is now considering a moratorium on Federal coal leasing for 1983 and there is a possibility that the moratorium would last longer. A moratorium would have many unfortunate consequences, including the following:

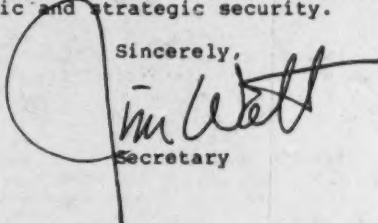
- o Fewer leases with the new environmental safeguards and stringent diligent development requirements new leases contain would be available. New leasing allows environmentally preferable coal leases to compete with older leases which did not receive the careful planning now required of coal leases. Consequently, the costs associated with environmental damage would likely be increased by a moratorium.
- o Coal reserves in old leases with higher mining costs would be forced into production instead of lower cost coal potentially available in new leases.
- o Competition among coal suppliers would be reduced. Existing levels of industry concentration of coal ownership would be perpetuated.
- o Windfall profits on old leases would likely be increased because of the reduced availability of new leases. Past speculators in old leases would reap larger gains via lease transfer or reassignment because industry would not be able to shop as competitively in the marketplace for new leases and reserves.
- o Federal monopoly powers would create a risk that a shortage of desirable Federal coal would drive up coal prices in the market segment served by western coal and, indirectly, the prices of electricity and manufactured goods to American consumers.
- o Substantial Federal leasing revenues would be lost. The coal leasing program provided \$123 million in bonus revenues from January 1981 to October 1982 and \$101 million in royalty revenues in FYs 1981 and 1982. These revenues are shared 50/50 with the States.
- o Displacement of imported fuels currently used for power plants or other heat processes would be reduced, thereby harming national economic strength by increasing imports.
- o America's ability to compete in foreign markets and with foreign manufacturers in American markets would be reduced because of less competitive coal prices.

Coal leased under the Federal Coal Management Program is closely scrutinized for environmental suitability. There is wide public participation, including state and local governments, in leasing decisions. Past leasing actions (including the Powder River lease sale) have been taken with the agreement of affected states. The State of Wyoming has joined with the Interior Department to defend the results of the Powder River sale -- including fair market value -- in Federal court.

The Federal coal program should provide a stable continuing supply of coal to the market. After 10 years of a moratorium during the 1970s on Federal coal leasing, the coal markets need the reassurance that a continuing supply will be forthcoming. The full Federal planning for lease sales requires 4 to 6 years; decisions to make coal available cannot be implemented on short notice. In the past 12 years, we have spent 10 years in planning and 2 years leasing; more planning hardly seems to be the answer.

The current leasing of Federal coal is to supply market demands in the 1990s. Short term market conditions at the present time provide little if any evidence of the demand for coal in the 1990s. For all these reasons, it is urgent that the House Appropriations Committee not adopt a new moratorium on Federal coal leasing. It would be damaging to consumers, jobs, environment, and this Nation's economic and strategic security.

Sincerely,



Secretary

U. S. GOVERNMENT
USE ONLY

May 4, 1982

REPORT OF THE ECONOMIC EVALUATION COMMITTEE: John D. Greger, Orvel Gustafson, Neal Jacquot, Ervin Podrabinsky, Vince Vogt, and Tim Mac Gillvray, Chairman

POWDER RIVER BASIN LEASE SALE POST-SALE ANALYSIS

On April 28, 1982, the Powder River Basin Federal coal lease sale was conducted in Cheyenne, Wyoming. Thirteen tracts were offered for public bidding, with eleven of those tracts receiving bids. Of the eleven tracts which received bids, only three tracts received any competitive bids (viz., Keeline, West Decker, and the small business set-aside tract Coal Creek).

While four tracts had been initially identified for "intertract" bidding, only Cook Mountain of those four was able to be offered by sale date (surface owner consent was never obtained by BLM for the other three tracts).

Consistent with the present Postsale Evaluation Procedures ["Guidelines"], the Economic Evaluation Section of the North Central Region (EES-NCR) has reviewed the bidding results of this lease sale. Our findings are presented below.

POST-SALE ANALYSIS

First, it is our considered opinion (consistent with these guidelines) that the submitted high bonus bids on each of the Federal tracts in Montana be accepted, as those bids meet or exceed our pre-sale estimate of value and post-sale analysis has not altered any of those values.

Second, it is the opinion of EES-NCR that the high bonus bids submitted on the Federal tracts in Wyoming also be accepted (as they meet or exceed our pre-sale estimate of value, or exceed our revised post-sale estimate of fair market value), with the exception of Little Rawhide and Rocky Butte which require further explanation.

With respect to the Spring Draw tract, it was learned during our post-sale analysis that part of the original data supplied to our EES-NCR group was significantly in error, and that error resulted in a value which had to be adjusted downward from 16.2 cents per ton to 3.96 cents per ton. After that adjustment was made, the submitted high bonus bid exceeded the adjusted pre-sale estimate of value. Therefore, EES-NCR recommends acceptance of the bid on the Spring Draw tract.

Since the bids on both the Little Rawhide and Rocky Butte tracts did not exceed our pre-sale estimate of value, it was necessary to proceed through our analysis consistent with the overall post-sale guidelines.

It was recognized by EES-NCR that there were "Special Circumstances" which applied to the Little Rawhide tract which would dictate acceptance of the single high bonus bid, irrespective of the particulars of the remaining guidelines.

Specifically, it is our opinion that the Little Rawhide tract is a "potential for bypass of (the) coal..." [as cited in guidelines, p. 8, section #3(e)]. It is questionable, due to the size and mining conditions of the tract, whether it could be mined economically alone or in conjunction with the adjacent mineable Federal unleased coal. If the tract could economically be mined in conjunction with the other unleased Federal coal, it is our opinion that the resultant value of the tract would be less than the high bonus bid received. Therefore, we recommend acceptance of the bid on the Little Rawhide tract.

PART #1 - DETERMINATION OF ADEQUATE COMPETITION

Circumstances surrounding the bidding results on the Rocky Butte tract require a step-by-step application of the post-sale guidelines (below).

Element #1 - Competitive Market Structure

Only one bidder, Texas Energy Services, submitted a sealed bid for \$2,300 per acre for a total of \$1,168,800. No oral bids were made, thus the single sealed bid represented the high dollar bid.

Information received from the BLM Wyoming State Office indicates that the bidder had made previous surface owner lease agreements with certain qualified surface owners on portions of the Rocky Butte tract. Texas Energy had agreed to transfer their rights of surface (prior to sale) to the successful bidder upon condition of reimbursement of purchase price previously paid (as well as other cost incurred at time of surface rights transfer). Ownership of the other remaining portions of the Federal tract were not held by qualified surface owners. It appears therefore, that Texas Energy held no special advantages for the tract since they were willing to transfer those portions of land for which they held surface control.

Since no other bidders bid on the tract, there are no other comparative bidding advantages held by Texas Energy. Thus, we recommend acceptance under this criteria.

Element #2 - Bidder Participation

- * There was only one bidder (as cited above).
 - * No subsequent oral bids were made on this tract.
- Thus, the bidder participation criteria warrants rejection.

Element #3 - High Bid Offered

- * Only one sealed bid was received for the Rocky Butte tract. This bid was equal to the "floor bid" level, and no oral bids followed. There was no increase from the floor bid, or from the maximum sealed bid to the final high bid. The guidelines state that the high bid should be at least 10% higher than the high sealed bid. Thus, this guideline element does not apply, and no decision to accept or reject can be made.

Element #3 - continued

- * EES-NCR has considerable difficulty determining the exact meaning of "qualitative assessment". The Rocky Butte bid "appears" to be substantially below bids received for other comparable tracts in the lease sale, and we would therefore recommend rejection of the bid.
- * High bid for the Rocky Butte tract was 2.51 cents per ton, and the pre-sale estimate was 5.97 cents per ton. The high bid is 42% of the estimate. Because there was only one bidder on this tract, the guidelines say the high bid should be at least 90% of the presale estimate. This test clearly indicates that the bid of 2.51 cents per ton should be rejected.

The reliability of the presale estimate is a matter of opinion. A pre-sale estimate is only as good as the data upon which it is based, and the basic geologic data for this lease sale has proven to be largely unreliable. Reserve figures and stripping ratio figures for other tracts in the sale have proven to be inaccurate as they were provided to EES-NCR, and this inaccuracy could easily apply to Rocky Butte. Because of the possible data problem, a downward adjustment of our original pre-sale estimate would be appropriate. It is doubtful, however, if this downward adjustment would be sufficient to warrant acceptance of this bid - but this is technically indeterminate.

Consideration was given to the applicability of the comparable sale used to calculate our pre-sale estimate. That sale was consummated in 1980, and the market has reflected indications of a downturn since that time. Recent Federal coal sales, however, have indicated an upturn in value of coal tracts. No decision can be made whether to accept or reject the bid based upon the market due to these differing indications.

The comparable sale used was for the sale of a pre-1976 Federal lease, which has different diligent development restrictions than would any new lease. It is difficult to determine any precise adjustment to properly account for the different diligent development requirements; therefore no decision can be made for recommendation of acceptance or rejection.

Considering the facts of the above elements, it is the opinion of EES-NCR that there was no competition for the Rocky Butte tract.

PART #2 - COMPARABLE HIGH BID ANALYSIS

A comparable high bid analysis was performed by comparing 70% of the mean normalized value received on the comparable tracts in relation to the actual high bid offered on Rocky Butte [see Table 1]. The 70% factor was dictated within the guidelines, but EES-NCR has been provided no backup justification for that figure.

The comparable tracts used in the analysis were the Spring Draw and Keeline tracts. This selection of comparable tracts was made through the elimination

of all Montana tracts and the Wyoming maintenance tracts. The Montana tracts were eliminated as comparable tracts because of the differing mining methods and tax structure encountered in Montana vs. those mining methods and tax structures in Wyoming. The Wyoming maintenance tracts were eliminated as comparable, since the amounts bid on those maintenance tracts would reflect the value of those tracts when mined in conjunction with an ongoing operation. These bids would not reflect the value of a tract to be mined with a new operation (as is the case with Rocky Butte).

Adjustments to normalize were based upon the differences between the pre-sale value for Rocky Butte and each of the pre-sale values for the comparable tracts. The pre-sale value for Spring Draw was adjusted to reflect a post-sale discovery (by the Casper District Resource Evaluation office) of a significant data error in stripping ratio previously supplied by that office.

Since the pre-sale value of the Keeline tract was negative prior to the tax effect and payment plan adjustments, those adjustments were not made pre-sale since they would only result in a more negative value when the minimum bid was set at \$25/acre. The two adjustments on taxes and payments were made in our post-sale analysis in order to determine the value of the tract for purposes of arriving at the adjustment to normalize.

Since 70% of the mean normalized value (an arbitrary "value" for which EES-NCR has seen no justification) exceeds the actual high bid for Rocky Butte, the guidelines require rejection of the bid based upon the comparable high bid criteria.

PART #3 - EXAMINATION FOR SPECIAL CIRCUMSTANCES

As indicated heretofore, virtually each of the foregoing "tests" within the present guidelines gives strong indication for rejection of the single submitted high bonus bid on Rocky Butte. In this section, however, it becomes apparent that these guidelines are both technically indeterminate and internally inconsistent.

Overall questions regarding "...public benefits from leasing..." can enjoy a very wide range of interpretation. It is an affirmative fact that if the Rocky Butte tract were to be leased, half of the front-end bonus bid (approximately \$5.6 million) would go into the coffers of the State of Wyoming. Since those monies are automatically earmarked by the State for public school expenditures, it is easy to argue that a present value "public benefit" would be economically conferred now. Contrariwise, if the bid on Rocky Butte were to be rejected, that same dollar amount of a "public benefit" would be currently denied.

If, however, this same Federal tract were to be reoffered at some future date, and if it were to receive a higher front-end bonus bid (in present value terms), then a greater "public benefit" would be simultaneously conferred upon both the Federal government and the State of Wyoming. It is impossible to accurately speculate if such an occurrence will or will not take place, especially given current market conditions for coal leasing.

It is the opinion of the Economic Evaluation Committee, however, that the economic welfare questions involving "public benefit" are inappropriate for economic minerals analysis, especially as they influence the analytical process of determining achievement or non-achievement of "fair market value" on any given Federal tract. Those kinds of questions should more properly be addressed on a policy level within Department of Interior, rather than on a technical/analytical level in an evaluation group of a Regional office of a Bureau. Thus, whether the "...Department might have a greater than usual willingness to sell..." is (in our opinion) a question which must be decided upon with a greater agglomeration of factual data and policy opinion than exists within these guidelines.

Under #3 (a) then, it is not possible to forecast with any degree of accuracy the "...likelihood of a higher bid if the tract is reoffered in a later sale..."

Under #3 (b), "The expected loss of revenue due to delay of mining the coal" can refer to either losses incurred if the tract is not leased at the present time of bonus, royalty, and rental (in present value terms), or (conceptually) to losses only of "royalty" -- as opposed to "revenue". As presently stated, these guidelines are technically unclear and/or internally inconsistent.

If by "expected loss of revenue" is really meant "expected loss of royalty", then any Federal lease which experiences delay in issuance could logically be construed to result in an "expected loss", since mining would be delayed (unless the regulatory permit-issuance phase was somehow shortened in time, or unless delay resulted in actual mining during some future market-period when greater dollar value of coal exists).

If "expected loss of revenue" includes all revenue from the Federal lease (including front-end bonus, royalty, Federal tax payments, etc.), then a loss could occur except where a reoffering resulted in a greater front-end bonus (in present value terms). Attainment of higher bonus bids in the future, however, is mere speculation, especially in view of the limited industry interest presently exhibited (i.e., only one bid on most tracts).

Under #3 (c), there appears to be little (if any) "impact of acceptance or rejection of this tract's high bid on bidding for other tracts in future sales", since Rocky Butte is the single largest tract (445 million tons), is neither a "maintenance" tract nor a small business set-aside, and all other tracts have been clearly recommended for acceptance of high bonus bids.

Under #3 (d), no bidding competition existed for the Rocky Butte tract, and the true value (and normalized mean of the comparable range of values) have been discussed previously.

Under #3 (e), there currently exists "no potential for bypass of coal or for shutdown of existing mining operations if the tract is not leased."

SUMMARY AND CONCLUSIONS

- >>> All high bonus bids submitted on the Federal tracts in Montana were at or above the pre-sale estimate of MAB, and should be accepted;
- >>> All high bonus bids submitted on the Federal tracts in Wyoming were at or above the pre-sale or revised post-sale estimate and should also be accepted, except Little Rawhide, Spring Draw, and Rocky Butte;
- >>> While Little Rawhide received only one bid (which was lower than the initial pre-sale estimate), it is a potential bypass tract (consistent with part #3 (e) - Special Circumstances). It is the opinion of EES-NCR that under no circumstances would the value of the tract be higher than Amax's bid if the coal were mined by some other firm (i.e., even if mined in conjunction with surrounding mineable unleased Federal coal). Thus, the submitted high bonus bid should be accepted.
- >>> With respect to Spring Draw, during our EES post-sale analysis, the Casper District-RE office found a significant data error in data applicable to stripping ratio on this tract. While the geologic personnel that provided the original data figures are no longer in government service, that data error resulted in a large reduction in our pre-sale estimate which in turn resulted in a value lower than the high bonus bid on this tract. Therefore, EES-NCR recommends acceptance;
- >>> On Rocky Butte, the present guidelines yield mixed results for acceptance or rejection. It is the opinion of EES-NCR that...
 - > Under "Competitive Market Structure", the single bidder had no known special advantages which might inhibit competition. Thus, element #1 would dictate acceptance.
 - > On "Bidder Participation", there was only one, single bidder active on this tract, and no pattern of oral bidding whatsoever. This total lack of competition would normally warrant rejection under element #2.
 - > Under element #3, there was no increase from the floor bid. Therefore we cannot recommend acceptance or rejection. While EES-NCR is unsure of the precise meaning of the term "qualitative assessment", our "gut feeling" is that the bid on Rocky Butte was low when compared to other tracts in the sale. Thus, rejection would be recommended.

Further, the offered bid was only 42% of our pre-sale estimate and we would therefore recommend rejection. However, EES-NCR recognizes that the data used in the analysis may be unreliable. To accept the tract, the unreliability of the data would require over a 50% risk factor to warrant acceptance. We have no basis for determining the degree of uncertainty of the data, and therefore cannot recommend acceptance or rejection based upon this criteria.

>>> Comparable high bid analysis (as cited in our text) would dictate rejection of this bid.

>>> Under #3 - Examination for Special Circumstances, the kinds of questions addressed in this element should not be included in economic minerals analysis. It would be pure speculation to attempt to forecast "likelihood" or "public benefits" from future lease sales, and therefore this criteria yields mixed results of both acceptance and rejection of Rocky Butte.

Based upon the foregoing, it is possible to conclude that all tracts should be recommended for acceptance to BLM, with the single exception of Rocky Butte which (because of these guidelines) yields no affirmative recommendation in either direction.

If EES-NCR were not faced with these present post-sale guidelines which dictate different results (depending upon the criteria used), we would and could have provided our own detailed and statistical tests of the bidding results (such as A.E.O.T. or other procedures currently used on OCS bidding results). Those results (we feel) would have clearly shown that the high bonus bid on Rocky Butte would normally have been rejected.

John D. Greger
John D. Greger, Regional Appraiser

Orvel Gustafson
Orvel Gustafson, Industry Economist

Vincent Vogt
Vincent Vogt, Mining Engineer

Neal F. Jacquot
Neal F. Jacquot, Minerals Economist

Ervin Podrabney
Ervin Podrabney, Mining Engineer

Tim MacFarley
Tim MacFarley, Chairman

FOR U.S. GOVERNMENT USE ONLY

TABLE I - COMPARABLE HIGH BID ANALYSIS
 (Rocky Butte, Wyoming Federal Tract)

	Rocky Butte [\$/ton]	Comparable Tracts	
		Spring Draw [\$/ton]	Kaelina [\$/ton]
Rocky Butte Pre-sale value		+ 0.05970	+ 0.05970
(less) Comparable pre-sale values		+ 0.03956	- 0.08000
= Adjustment to Normalize		= + 0.02014	= + 0.13970
(plus) Actual comparable high bid		+ 0.08019	+ 0.00952
= Normalized Values		= + 0.10033	= + 0.14922
Mean of the Normalized Values	+ 0.12478		
(times) 70%	= + 0.08734		
	-or-		
	8.7 cents/ton		
Actual High Bid	2.5 cents/ton		

CONCLUSION: Since 70% of the mean normalized value exceeds the actual high bid on Rocky Butte, the guidelines require rejection of the bid based solely upon the comparable high bid criteria.



United States Department of the Interior

OFFICE OF INSPECTOR GENERAL
WASHINGTON, D.C. 20240

FOR OFFICIAL USE ONLY

May 11, 1983.

To: Under Secretary
Assistant Secretary, Land and Water Resources
Assistant Secretary, Energy and Minerals
Assistant Secretary, Policy, Budget and Administration
Director of Public Affairs
Director of Congressional and Legislative Affairs
Solicitor
Director, Bureau of Land Management
Director, Minerals Management Service
Chairman, Land and Water Task Force

From: Assistant Inspector General for Investigations

Subject: Report of Investigation, 3VI078, Douglas H. Hileman,
Powder River Federal Coal Lease Offering

The attached subject report of investigation is FOR OFFICIAL USE ONLY.

The Office of the Secretary, Director of Public Affairs, has requested that no comments or release of this information be made without clearance of the Director of Public Affairs.

James M. Yohe
James M. Yohe

Attachment

DISTRIBUTION AND USE OF THIS REPORT IS LIMITED BY INTERIOR DEPARTMENT REGULATION

United States Department of the Interior
Office of Inspector General
Washington, D.C. 20240



FOR OFFICIAL USE ONLY
(Public Availability to be Determined
under Title 5, U.S.C. Section 552)

Date MAY 11 1983

REPORT OF INVESTIGATION

Douglas H. HILEMAN
Manager, Resource Evaluation Staff
Minerals Management Service
Casper, Wyoming

Powder River Federal Coal
Lease Offering

Case No.: JVI 078
Office: Assistant Inspector General
for Investigations
Allegation/Violation: Unauthorized
Disclosure of Proprietary Information
Status: Completed
Prepared by: Special Agents
Michael J. Martin and Morris J. Ballard

SYNOPSIS

On April 20, 1983, GAO requested OIG investigation of MMS employee, Douglas H. HILEMAN, for possible unauthorized release of proprietary information to industry. During GAO investigation of Powder River coal sale, HILEMAN refused to identify industry sources with whom he discussed coal values.

Investigation developed that on March 25, 1982, HILEMAN received a call from a Carter Mining employee, who discussed minimum acceptable bids (MAB) for Powder River sale. HILEMAN assumed that a leak of initial MMS MAB occurred and notified a fellow MMS employee and their supervisor, Duayne HULL.

In the evening of March 25, 1982, HILEMAN's fellow MMS employee received a call at his residence from a McGraw Hill reporter who advised that the coal values were out to industry and the press. The reporter read a listing of the tracts offered, but not the coal values. The MMS employee concluded the tract listing was in identical order of initial MMS MAB listing. The MMS employee reported his assumption of bid compromise to his supervisor, Hull, who wrote the March 26, 1982, memorandum citing a compromise of initial MMS MAB values.

Approved

James M. Yohe
James M. Yohe
Assistant Inspector General
for Investigations

THE REPRODUCTION OF THIS REPORT OR ANY PART THEREOF IS PROHIBITED.

HILEMAN, HULL, and fellow MMS employees were unaware that on March 25, 1982, a 26-page "BIM Lease Sale Schedule and Notice of Coal Lease Offering, Powder River Federal Coal Production Region", had been issued to the public, in which the entry level bids are also referred to as "minimum acceptable bids". The Carter Mining employee had the BIM coal lease offering information when he discussed MABs with HILEMAN. McGraw Hill, as matter of corporate policy, declined to permit OIG interview of reporter. Not until after the April 28, 1982, coal lease sale did McGraw Hill publish the initial MMS MAB values. It appeared in Inside Energy of May 7, 1982, in a schedule depicting the Powder River coal sale highlights.

Neither GAO nor OIG investigation developed any other substantive allegation of a leak of information which contained sufficient specificity to pursue inquiry to corroborate or refute allegation.

HILEMAN did discuss general coal economic data with five professional associates to ascertain their opinions as to the current market value of coal which he believed substantially declined in value since 1980. All stated that no discussions were held on specific tracts in the Powder River coal leasing offering.

DETAILS

By letter of April 20, 1983, the GAO Fraud Referral and Investigation Group requested OIG investigation into the activities of Douglas H. HILEMAN, concerning unauthorized disclosure of proprietary Powder River coal lease valuation data. During GAO's investigation, HILEMAN refused to identify his industry contacts relative to Powder River Coal Lease offering (Exhibit 1). GAO provided a copy of a March 26, 1982 memorandum of Dwayne E. HULL, Minerals Manager, North Central Region, MMS, stating "It has been confirmed to members of our staff that our MAB values have been distributed by unknown parties (not within MMS) and are in the hands of some industry, state, and private individuals." (Exhibit 2)

On April 29, 1983, Douglas H. HILEMAN, BLM (formerly MMS), Manager of the Resource Evaluation Staff, Casper, Wyoming, executed an affidavit (Exhibit 3) in which he stated, in part:

"In approximately mid-March 1982, I received a telephone call at my office from Doug FULLER, Environmental Scientist, Carter Mining Company, 505 So. Gillette Ave., Gillette, Wyoming, Telephone 307/682-8881. FULLER inquired why there was a difference in the MAB's on the Rocky Butte and Spring Draw tracts. FULLER knew the difference in MAB's down to 2 decimal points and said 'At least 3 other companies have them' (MAB's). FULLER is the only person I spoke with that I felt actually had the MAB information. During the telephone conversation with FULLER he told me he had the MAB figures in front of him at the time. FULLER read the Spring Draw and Rocky Butte MAB information to me and was accurate down to 2 decimal points."

"Immediately subsequent to my conversation with FULLER I went to Dwayne HULL, Regional Director, MMS, Casper, Wyoming. HULL later documented that the MAB information was no longer confidential. HULL documented this in a memorandum dated March 26, 1982, to the Deputy Chief, Onshore Minerals Management, MMS, Reston, VA. The information in the memorandum was accurate."

Doug FULLER was interviewed in the presence of his company attorney. He admitted discussing minimum acceptable bid (MAB) values with HILEMAN on March 25, 1982. However, Fuller stated he was quoting MAB's from the March 25, 1982, BLM "Lease Sale Schedule and Notice of Coal Lease Offering, Powder River Federal Coal Production Region." Fuller advised he arranged with TRUJILLO Land Services to get copies and call him when BLM posts data relating to the Powder River Coal Sale. On March 25, 1982, TRUJILLO called him and, subsequently, he received a reproduction of BLM's March 25, 1982 lease sale schedule. FULLER denied having access to the initial MMS minimum acceptable bid data.

On May 5, 1983, Deanna TRUJILLO, owner/operator of TRUJILLO Land Services;

P.O. Box 1252, 1816 Warren Avenue, Wyoming 82001, related that sometime prior to March 25, 1982, TRUJILLO Land Services had been hired by Doug FULLER, Carter Mining Company, Gillette, Wyoming, to provide any and all BLM documents relating to the Powder River Coal Sale placed in the BLM Wyoming State Office Public Room for public access and dissemination. TRUJILLO stated that on March 25, 1982, she observed a document in the BLM Public Room entitled, "Department of the Interior, Bureau of Land Management Lease Sale Schedule and Notice of Coal Lease Offering, Powder River Federal Coal Production Region." The document bears the date stamp of March 25, 1982. TRUJILLO related she removed the document from the bulletin board in the public room and used the xerox machine which is available to the public and copied the entire document; she reposted the document on the bulletin board. TRUJILLO stated she then telephoned FULLER and read him the document. She also mailed him a copy. She furnished a copy of her billing for this service dated March 25, 1982 (Exhibit 4).

For reference, Exhibit 5, contains the first three pages of the 26-page, March 25, 1982, BLM Lease Sale Schedule and Notice of Coal Lease Offering, Powder River Federal Coal Production Region. It is noted that the last paragraph on page two states:

"The minimum acceptable bid (emphasis added) to be considered was entry level bids for tracts in those categories are as follows:

Category I 8.0 cents per ton of estimated recoverable coal" . . . etc.

Additionally, on page three, the last paragraph states:

"The entry level bid for any tract is the minimum acceptable bid (emphasis added) that will be considered for any tract . . ."

On May 5, 1983, Douglas HILEMAN was reinterviewed and advised of the FULLER and TRUJILLO statements. He said he was unaware of the March 25, 1982, BLM Lease Sale Schedule. HILEMAN then added, "I blew it."

On May 6, 1983, HILEMAN provided an affidavit (Exhibit 6) which states, in part:

On March 25, 1982, I was not aware the BLM had completed a Notice of Sale and had placed the Entry Level Bid data in the document. I was still treating the Entry Level Bid data as confidential.

On March 25, 1982, during my telephone conversation with FULLER, I recall that I became upset due to the accuracy of FULLER's bid quotations. I know at that time, I would have been equally upset whether FULLER had the Minimum Acceptable Bids or the Entry Level Bids because I was concerned with

keeping all bid data confidential. At this time, based solely upon my recollection of the telephone conversation, I recall becoming upset with the fact that FULLER had what I thought was confidential data. I do not recall whether FULLER had the Minimum Acceptable Bid Data or the Entry Level bid data described in the BIM, March 25, 1982, Notice of Sale.

On March 25, 1982, immediately subsequent to my conversation with FULLER, I advised Dwayne HULL, Regional Director, MMS, Casper, Wyoming, of what I felt was a leak of confidential bid data. On March 26, 1982, HULL completed a memorandum regarding the suspected leak of confidential bid data. I read the completed HULL memorandum yet declined to surname the memorandum because I felt the memorandum could possibly get into the hands of persons who would degrade the government's honest efforts to lease coal.

In an effort to further clarify how I could have possibly confused Minimum Acceptable Bid data and Entry Level Bid data as having been quoted to me by FULLER: I wish to point out that I worked with both the data routinely before the sale. I was primarily concerned with data security subsequent to my telephone conversation with FULLER.

On May 6, 1983, Dwayne E. HULL, former Minerals Manager, North Central Region, MMS, was contacted to determine the basis for his March 26, 1982, memorandum (Exhibit 2) concerning the Powder River Basin Coal Sale. He provided a memorandum (Exhibit 7) in which he stated:

"On March 25, Mr. Douglas HILEMAN came into my office and stated that he had been hearing rumors that the Minimum Acceptable Bid (MAB) values had been leaked to industry, but he was now convinced that was the case because he had talked with an industry representative who had the figures."

"Also, on March 25, Mr. Tim MAC GILLVRAI informed me by telephone that he had talked with a representative from McGraw-Hill who had a copy of our MAB values down to the last decimal point."

Although no other true facts were available, there were many rumors that the MAB values had been released. So many, in fact, that it would seem cause for concern.

As I recall, I had asked Mr. HILEMAN to prepare a memo alerting headquarters to the fact that the MAB values were out. Mr. HILEMAN said he didn't want to prepare such a memo because he needed to protect the confidence of his industry source. I then told Mr. HILEMAN that I would prepare the memo, but I wanted he and Mr. MAC GILLVRAI to review the memo to be sure the facts were correct. I did prepare the memorandum and asked each gentleman to review it. Each did review it. Mr. HILEMAN indicated the memo was accurate, but

declined to surname the memo. Since Mr. HILEMAN was not the author, I didn't consider it an issue at the time. As I recall, Mr. MAC GILLVRAY did surname the memo.

Timothy J. MAC GILLVRAY, Chief, BLM (formerly MMS), Branch of Economic Evaluation, Casper, Wyoming District Office, MACGILLVRAY advised that on March 25, 1982, he received a phone call at his home at night from a reporter from McGraw-Hill (publishers of Coal Week, Inside Energy, and Federal Lands) asking if he knew that MMS coal values were out to industry and the press as well. MAC GILLVRAY stated he asked the reporter to verify that he indeed had the coal values, and the reporter proceeded to read the exact names of the offered tracts (from top to bottom) in the exact order that had been listed on the attachment of an MMS March 17, 1982, memorandum to BLM-Cheyenne (Exhibit 8). MAC GILLVRAY said the reporter did not state numerical values to him; however, MAC GILLVRAY stated after hearing the listing read he acknowledged that the reporter had the correct data. At the conclusion of this call, MAC GILLVRAY notified Mr. HULL, at his home, that both the press and industry had the coal values.

MAC GILLVRAY advised that Doug HILEMAN told him of a phone call that HILEMAN received from industry earlier on March 25, 1982, concerning the MABS. MAC GILLVRAY believed that it was essential that MMS Headquarters be notified both verbally and in writing but he stated HILEMAN did not believe it should be put in writing. MAC GILLVRAY said the matter was discussed with their supervisor, Dwayne HULL, who on March 26, 1982, wrote a memorandum (Exhibit 2) reporting the "leak" of MMS data values outside of government.

A review of McGraw-Hill publications, i.e., Coal Week, Inside Energy, and Federal Lands reflected that after the April 28, 1982 Coal lease offering, Inside Energy published an article on May 7, 1982, by Mark CRAWFORD, which included a schedule reflecting the initial MMS minimum acceptable bids. The tract listing is in the order of the March 25, 1982, BLM lease sale offering (Exhibit 9).

On May 9, 1983, Mark CRAWFORD was contacted. After his conferring with McGraw-Hill management, he advised that corporate policy would not permit his interview by OIG investigators.

GAO advised that they attempted to verify the reported disclosure through both (1) written documentation and (2) interviews with numerous Interior employees in field offices and at headquarters and with representatives of coal companies. Although GAO found only one document related to the disclosure (Exhibit 2), many Interior officials, including the Deputy Director of the Minerals Management Service at congressional oversight hearings held on July 15, 1982, acknowledged that an unauthorized release of data had occurred. In addition, numerous Service and Bureau field officials told GAO that the disclosure occurred, though they could not describe details of it.

This OIG investigation disclosed other statements of allegations of leaks which were too general, and lacked specificity as to timing, circumstances,

or industry/press sources. In general, insufficient data was provided to conduct further inquiry to corroborate or refute this issue.

GAO reported in their April 20, 1983, request for investigation (Exhibit 1) that in interviews of Doug HILEMAN, he stated he discussed Powder River coal valuation with several coal industry and State of Wyoming representatives in early March 1982, but declined to give GAO the names of all these individuals.

HILEMAN advised OIG investigators that in the first few months of 1982, based upon frequent contacts with industry, he began to detect that the market for coal lands had substantially declined since 1980. Because of the suspected decline he began to question MMS MAB values. He telephonically contacted the following five professional acquaintances to ascertain their opinions as to the current market value of coal:

- . Walter ACKERMAN, formerly employed by the State of Wyoming, Department of Environmental Quality, Cheyenne, Wyoming (now deceased).
- . Harold L. BAILEY, former Mine Manager with Cities Services, Dry Fork property.
- . Roger RICE, Manager, Geology Department, Western Energy Company, Billings, Montana.
- . Jerome D. GOODRICH, Jr., General Manager, Carter Mining Company, Gillette, Wyoming.
- . Neil J. ISTO, General Manager - Mining, Shell Oil Company, Houston, Texas.

On May 9, 1983, Neil J. ISTO and Jerome D. GOODRICH, Jr., were telephonically contacted. They advised that HILEMAN did contact them in early 1982 concerning the current market value of coal. They stated that general coal economic data was discussed but no discussions were held on specific tracts in the Powder River Coal lease offering. GAO reported that they had previously contacted ACKERMAN, RICE, and BAILEY and received similar responses.

No further investigation is being conducted.



UNITED STATES GENERAL ACCOUNTING OFFICE
WASHINGTON, D.C. 20548

ACCOUNTING AND FINANCIAL
MANAGEMENT DIVISION

APR 20 1982

Mr. Richard Mulberry
Inspector General
Department of the Interior

Attention: Mr. James Yohe

Dear Sir:

During the course of GAO's congressionally requested review of the Powder River Basin Federal coal lease sale of April 1982, our auditors looked into allegations of an unauthorized disclosure of proprietary Powder River coal lease valuation data within the Department of the Interior in March 1982. The GAO auditors found the following written and testimonial evidence of the disclosure:

- Memo from Dwayne Hull, Mineral Manager, North Central Region, to MMS HQ concerning unauthorized disclosure of MAB values (see enclosure I).
- Statements by Doug Hilefman, a member of Mr. Hull's staff. In interviews Mr. Hilefman told GAO that he discussed Powder River coal valuation with several coal industry and State of Wyoming representatives in early March 1982, but declined to give the names of three of these individuals (see enclosure II).

The alleged disclosure would have violated Interior regulations (43 C.F.R. 2.20--see enclosure III), and potentially relates to a Departmental decision to undertake multi-million dollar lease devaluation before the sale. Any proven connection between the disclosure and this devaluation would represent a severe breach of standards of conduct for Interior employees.

The disclosure has caused public controversy, and has attracted congressional attention. Hearings are planned in early May by the Subcommittee on Oversight and Investigations, House Interior and Insular Affairs Committee, on this issue and other sale-related matters (see enclosure IV).

To enable us to keep track of this referral, we have assigned control number 29409 to it and request that this number be used in future correspondence with our office concerning this matter.

If further information is needed, please contact Ned Smith or Dave Brack, the GAO auditors involved in this review, who may be reached on 254-6937.

Sincerely yours,

Gary W. Carbone

Gary W. Carbone
Director
Fraud Referral and
Investigations Group

Enclosures - 4

ENCLOSURE I

MAR 26 1982

Memorandum

To: Deputy Chief, Onshore Minerals Management

From: Minerals Manager, North Central Region

Subject: Powder River Basin Coal Sale

Yesterday we received word that the Department's sale procedures have been changed. We believe that we have currently done everything desired by your office in regard to staying on schedule with the sale and have accomplished the Department's desired changes at this stage.

We are not yet advised as to how the sale and post-sale responsibilities will be handled, but we will do our best to adjust and complete the sale process as you desire. We do, however, have a concern that may need your special attention.

Under the old sale procedures, our MAB values would be published in the Federal Register for all to view. Even though we make every effort for those values to be held confidential until officially announced, there probably would be no significant harm if they "leaked" out prior to the public announcement.

Since we have a new system and will not publish our MAB values, it is more critical to "hold" these values. It has been confirmed to members of our staff that our MAB values have been distributed by unknown parties (not within MMS) and are in the hands of some industry, state and private individuals. We can also safely presume that many Federal employees have these figures without a real "Need to Know". Our fear is, since not all persons or groups have access to those figures, the sale procedures may be compromised.

Because we have not yet received a description of procedures, tasks and responsibilities, we wished to bring the above to your attention for appropriate consideration. We do not wish to cause undue alarm.

Wayne K. Hull

cc:

Deputy Minerals Manager, Resource Evaluation

MR. NCR Chron. File

File

DEHull:cjs:03/26/82

Handwritten:
 copy mailed to
 Neal Smith
 6-8-82
 3/27/82

AFFIDAVIT

"I, Douglas H. HILEMAN, 1151 Surrey, Casper, Wyoming 82602, being duly sworn, make the following voluntary statement to Michael J. MARTIN who has identified himself to me as a Special Agent, Office of Inspector General, U.S. Department of the Interior (DOI). No threats or promises have been made to obtain this statement. I have been advised that I do not have to make a statement, that any statement I make may be used against me in a court of law or civil or administrative proceedings."

"Mr. MARTIN has advised me he is conducting an official investigation into an alleged unauthorized disclosure of proprietary Government data which pertains to the 1982 Powder River Coal Sale conducted by the DOI. The data that is alleged to have been disclosed is the DOI, Minerals Management Service's Minimum Acceptable Bid (MAB) estimates for Federal coal reserves within coal tracts offered at the sale. It is further alleged that the release of this data may have allowed recipients to influence officials within the DOI to devalue the Federal coal reserves one month prior to the sale. Mr. MARTIN has asked that I identify all knowledge I have relating to the alleged disclosure of DOI data and devaluation of the Federal coal reserves. Mr. MARTIN has advised me this matter has attracted Congressional attention and statements may be considered in official departmental responses to inquiries."

"My name is Douglas HILEMAN. I am currently employed by the DOI, Bureau of Land Management (BLM), Wyoming State Office, at the Casper, Wyoming, District Office. I am currently employed in the capacity of a Minerals Manager, Grade GM-15. My office phone number is FTS 328-5187 or commercial 307/261-5187."

"In 1950, I completed a course of study which provided me with a Bachelor of Science Degree in the academic field of 'Mining Engineering; Coal Mining Option.' I subsequently became employed within the private commercial sector of the coal industry for 14 years. I was employed by Spring Canyon Coal Company, Kaiser Steel Corporation (Sunny Side Mine, Utah), and the McGinnis and Grafe Company (Oklahoma City, Oklahoma)."

"In 1964, I became employed with the DOI, Bureau of Mines, at Salt Lake City, Utah. In 1970, I became employed by the United States Geological Survey (USGS) in the capacity of Mining Engineer and later Area Mining Supervisor at Billings, Montana. In 1979, I transferred to the USGS office at Casper, Wyoming where I was employed as Deputy Minerals Manager for Mining. In approximately June 1981, I became the USGS Deputy Minerals Manager for Resource Evaluation at the Casper, Wyoming, Regional Office. In approximately August 1982, I returned to the employment position of Deputy Minerals Manager for Mining at the Casper office."

"My employment responsibilities between June 1981, and August 1982, as the Manager of the Resource Evaluation Staff, included the supervision of field investigations of unleased Federal coal deposits. These investigations included drilling, coal reserve calculations and the economic evaluations of these deposits. My responsibilities included making economic

evaluations of coal reserves within tracts that had been identified to be sold in the department's 1982 Powder River Coal Sale.

"Economic evaluations are determined through one of two available methods; (1) Comparative Sales, or (2) Discounted Cash Flow. Due to the Casper Resource Evaluation Staff having identified the 1980 sale of 2 coal tracts which were primarily Federal coal leases, I approved using the Comparative Sales method to determine the economic evaluations of the Powder River Federal coal tracts.

"At this point in this statement I have been requested to identify my understanding of the following terms:

- "1. Comparative Sales Used in Economic Evaluation: This term means a legitimate and objective sale, based solely upon economics, of a property comparable to the property being evaluated.
- "2. Fair Market Value: This term means the value of a property in today's market.
- "3. Entry Level Bid: This term means a value that the owner of a property desires to use as a floor for bidding.
- "4. Minimum Acceptable Bid: This term means a bid at Fair Market Value.

"In approximately February 1982, the economic evaluation of the Powder River Federal coal tracts were completed. These economic evaluations, also referred to as Minimum Acceptable Bids (MAB), were determined through use of the previously described comparative sales method.

"In approximately February 1982, the MMS, Resource Evaluation Staff at Reston, VA., received the Economic Evaluation data/MAB's from the Casper Resource Evaluation Staff. Due to ensuing telephone conversations with the Reston staff I know the information was received at Reston.

"The MMS routinely, upon determining the value of any given mineral to be sold to the public, provides the BLM with mineral evaluation data which is then made known to the public. This situation existed in the matter of the 1982 coal sale. BLM was provided with coal evaluation/MAB data.

"In the first few months of 1982, based upon frequent contacts with industry, I began to detect that the market for coal lands had substantially declined since the 2 coal tracts were sold in 1980. Because of the suspected decline I began to question our MAB figures.

"During this time I contacted Andy BAILEY, Deputy Director for Minerals Management, MMS, Reston, VA., and expressed my concerns. BAILEY and I mutually agreed this consideration should be researched.

"I telephonically contacted five (5) professional acquaintances to ascertain their opinions. Two of the persons I contacted will remain anonymous until I obtain their permission to reveal their identities. The other three persons are as follows:

- "1. Walter ACKERMAN - employed by the State of Wyoming, Department of Environmental Quality, Cheyenne, Wyoming (now deceased).
- "2. Harold L. BAILEY - former Mine Manager with Cities Services, Dry Fork property. BAILEY is now unemployed and residing at Tulsa, Oklahoma.
- "3. Roger RICE - employed by Western Energy Company at Billings, Montana, in the capacity of Manager of the company Geology Department.

"The general consensus of opinion was that the coal lands market was down between 25% to more than 50% since 1980.

"In approximately mid-March 1982, I received a telephone call at my office from Doug FULLER, Environmental Scientist, Carter Mining Company, 505 So. Gillette Ave., Gillette, Wyoming, Telephone 307/682-8881. FULLER inquired why there was a difference in the MAB's on the Rocky Butte and Spring Draw tracts. FULLER knew the difference in the MAB's down to 2 decimal points and said 'At least 3 other companies have them' (MAB's). FULLER is the only person I spoke with that I felt actually had the MAB information. During the telephone conversation with FULLER he told me he had the MAB figures in front of him at the time. FULLER read the Spring Draw and Rocky Butte MAB information to me and was accurate down to 2 decimal points.

"Immediately subsequent to my conversation with FULLER I went to Dwayne HULL, Regional Director, MMS, Casper, Wyoming. HULL later documented that the MAB information was no longer confidential. HULL documented this in a memorandum dated March 26, 1982, to the Deputy Chief, Onshore Minerals Management, MMS, Reston, VA. The information in the memorandum was accurate.

"In late March 1982, a new bidding system was introduced by the MMS in a public Notice of Offering. I have no knowledge how this new system influenced the MAB's.

"In my opinion, I do not feel the alleged unauthorized disclosure of MAB data would have an adverse impact on the sale.

"I am not aware of any industry lobbying to lower the MAB's subsequent to the alleged unauthorized data disclosure.

"I do not have any knowledge of why the DOI, Office of Inspector General, was not notified at the time an unauthorized disclosure of data was suspected.

"The unauthorized disclosure of MAB's to select persons would have given those persons an unfair advantage of time to establish their own economic values.

"A fear I had at the time I suspected an unauthorized disclosure of the MAB data was that all persons or groups of interested bidders had not been afforded access to the data at the same time. I did not feel this situation would compromise the sale.

"It is my opinion that the Federal Government did obtain Fair Market Value for those Powder River coal lands sold by the department in 1982.

"I have made this statement to Mr. MARTIN in the presence of Morris J. BULLARD, Special Agent-in-Charge, BLM, Wyoming State Office. Mr. MARTIN has accurately transcribed my statements into this Affidavit.

"I have read the foregoing statement consisting of 9 pages, each of which I have signed. I fully understand this statement and it is true, accurate, and complete to the best of my knowledge and belief. I made the corrections shown and placed my initials opposite each."

/s/ Douglas H. HILEMAN
April 29, 1983

Subscribed and sworn to before me
this 29th day of April 1983,
at the BLM, Buffalo, Wyoming.

/s/ Michael J. MARTIN
Special Agent
U.S. Department of Interior
Office of Inspector General

/s/ Morris J. BULLARD
April 29, 1983

FROM

TRIUMPH LAND SERVICES

P.O. BOX 1232

COLUMBIA, WYOMING 82801

TEL 434-7415 or 432-4977

STATEMENT

To: Fuller
 Carter Muni. Co.
 Box 3007
 Little, WY 82416

DATE March 25, 1982

TERMS _____

DATE	CHARGES	CREDIT	BALANCE
		BALANCE FORWARD ▶	
3/25/82	* Redd Coal Sale Notice Over Price & Sent A.M. pd. 4/5/82	\$50.00	Thank you!
	Thank You!		

YOUR CHECK # _____

4310-84

March 25, 1982

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

LEASE SALE SCHEDULE AND
NOTICE OF COAL LEASE OFFERING
POWDER RIVER FEDERAL COAL PRODUCTION REGION

U. S. Department of the Interior, Bureau of Land Management, Wyoming State Office, 2515 Warren Avenue, P. O. Box 1828, Cheyenne, Wyoming 82003 and Montana State Office, 222 N. 32nd Street, P. O. Box 30157, Billings, Montana 59107. In accordance with 43 CFR 3420.7-1 and in compliance with 40 CFR 1505.2, this notice contains the Secretary of the Interior's decision for a regional lease sale schedule in the Powder River Federal Coal Production Region.

On February 22, 1982, the Secretary selected 17 tracts in the Powder River Region in Montana and Wyoming to be offered for competitive coal lease sale on April 28, 1982, in Cheyenne, Wyoming. The 17 tracts, nine in Montana and eight in Wyoming, contain an estimated 2.24 billion tons of recoverable coal reserves. The Secretary decided to set aside the Coal Creek tract in Montana for bidding by small businesses.

The Secretary also decided to offer four Montana tracts, the Ashland (Decker-Birney), Cook Mountain, Northwest Otter Creek, and Southwest Otter Creek tracts, for lease by intertract sale procedures. Bidding on all four tracts will take place simultaneously and the two tracts receiving the highest bid per ton of recoverable coal will be leased.

Notice is hereby given that certain coal resources in the tracts described below in Campbell County, Wyoming, and Powder River, Big Horn and Rosebud Counties, Montana, will be offered for competitive lease by sealed bid followed by oral auction in accordance with the provisions of the Mineral Leasing Act of 1920 (41 Stat. 437), as amended. The sale will be held at 9:00 a.m., April 28, 1982, in the Conference Room, Third Floor, 2515 Warren Avenue, Cheyenne, Wyoming. Sealed bids must be submitted on or before 4:30 p.m., Tuesday, April 27, 1982, to the Wyoming State Office at the above address. No bid received after that time will be considered. No sealed bid that is less than the entry level bid listed below for the tract for which the bid is submitted will be considered.

The lease sale will be conducted in two parts. Each tract offered in Part 1 of the sale will be leased to the qualified bidder of the highest cash amount provided that the high bid for the tract equals or exceeds the fair market value of the tract as determined by the Secretary of the Interior. Part 2 of the sale will be held using intertract sale procedures and is described further below.

The tracts to be offered in Part 1 of the sale have been grouped in four (4) categories based on coal quality information as determined by the Department of the Interior. The minimum acceptable bids to be considered as entry level bids for tracts in those categories are as follows:

Category 1 8.0 cents per ton of estimated recoverable coal.

Little Rawhide Creek
Spring Creek
Spring Draw

Category 2 5.0 cents per ton of estimated recoverable coal.

Fortin Draw
North Decker

Category 3 2.5 cents per ton of estimated recoverable coal.

Rocky Butte
South Duck Nest Creek

Category 4 \$25.00 per acre regardless of tonnage.

Coal Creek
Colstrip A & B
Colstrip C
Colstrip D
Keeline
Kintz Creek
Timber Creek
West Decker

The entry level bids shown below for each tract in Categories 1, 2, and 3 have been converted to dollars per acre for bidding purposes.

Submission of a qualifying sealed bid for any one tract in a category qualifies the bidder to participate in the oral auction for any other tract in that category and in the oral auction for any tract in a lower category (Category 1 is the highest category; Category 4 is the lowest). Submission of a qualifying sealed bid for any tract in Category 2, for example, will allow the bidder to participate in the oral auction for any tract in Categories 2, 3, and 4. The tracts in the highest category will be sold first, followed by tracts in Categories 2, 3, and 4 in that order.

The entry level bid for any tract is the minimum acceptable bid that will be considered for that tract and will generally though perhaps not in every instance constitute an acceptable fair market value bid for that tract. The determination of fair market value will be made after the sale using the Department's estimate of value,

UNITED STATES DEPARTMENT OF THE INTERIOR
 OFFICE OF THE SECRETARY
 Office of Inspector General
 Central Region
 134 Union Blvd., Suite 510
 Lakewood, Colorado 80228

AFFIDAVIT

"I, Douglas H. Mileman, 1151 Surrey, Casper, Wyoming 82602, telephone 307-261-5187 (office), being duly sworn, make the following voluntary statement to Michael J. Martin who has identified himself to me as a Special Agent, Office of Inspector General (OIG), U.S. Department of the Interior (DOI). No threats or promises have been made to obtain this statement. I have been advised that I do not have to make a statement, that any statement I make may be used against me in a court of law or civil or administrative proceedings."

"On April 29, 1982, I completed an affidavit for Mr. Martin, in the presence of Morris J. Bullard, Special Agent, DOI, Bureau of Land Management (BLM), regarding my personal knowledge of specific incidents relating to the DOI, Powder River Coal Sale. In this affidavit I related that in approximately mid-March, 1982, I telephonically contactd five (5) individuals employed within the coal industry for the purpose of discussing general coal economics. In the previous affidavit I identified three (3) of the individuals I contacted. In addition to these persons I contacted the following persons:

1. Jerry Goodrich, Engineer, Carter Mining Company, Gillette, Wyoming, telephone 307/686-3204.
2. Neil Isto, Shell Corporation, Houston, Texas, telephone 713/870-2800.

"These five individuals provided me with their personal insight into the coal economics of the time period. I did not provide these individuals with any government data.

"In my April 29, 1983, affidavit I described a telephone conversation that I had with Doug Fuller, Environmental Scientist, Carter Mining Company, 505 So. Gillette Avenue, Gillette, Wyoming, telephone 307/682-8881. In the affidavit I described Fuller as having knowledge of the Mineral Management Service's Minimum Acceptable Bid (MAB) estimates for Federal Coal Reserves within coal tracts to be offered at the April, 1982, Powder River Coal Sale. I described Fuller as having knowledge of the figures down to 2 decimal points.

"On May 5, 1983, I was telephonically notified at my residence by Mr. Martin and advised that on March 25, 1982, the BLM, Wyoming State Office, posted for public knowledge, a document titled "United States, Department of Interior, Bureau of Land Management, Lease Sale Schedule and Notice of Coal Lease Offering, Powder River Federal Coal Production Region." On May 6, 1983, I researched the Resource Evaluation Office files and discovered a copy of the BLM document date stamped as received at the Resource Evaluation Office (RMS, Casper, Wyoming) on March 29, 1982. This document is dated March 25, 1982 by the BLM.

"On May 6, 1983, I read the BLM Notice of Sale document dated March 25, 1982. I have observed in this document the MMS entry level bid data.

"On March 25, 1982, I was not aware the BLM had completed a Notice of Sale and had placed the Entry Level Bid data in the document. I was still treating the Entry Level Bid data as confidential.

"On March 25, 1982, during my telephone conversation with Fuller, I recall that I became upset due to the accuracy of Fuller's bid quotations. I know at that time, I would have been equally upset whether Fuller had the Minimum Acceptable Bids or the Entry Level Bids because I was concerned with keeping all bid data confidential. At this time, based solely upon my recollection of the telephone conversation, I recall becoming upset with the fact that Fuller had what I thought was confidential data. I do not recall whether Fuller had the Minimum Acceptable Bid Data or the Entry Level Bid data described in the BLM, March 25, 1982, Notice of Sale.

"On March 25, 1982, immediately subsequent to my conversation with Fuller, I advised Duayne Hull, Regional Director, MMS, Casper, Wyoming, of what I felt was a leak of confidential bid data. On March 26, 1982, Hull completed a memorandum regarding the suspected leak of confidential bid data. I read the completed Hull memorandum yet declined to surname the memorandum because I felt the memorandum could possibly get into the hands of persons who would degrade the government's honest efforts to lease coal.

"In an effort to further clarify how I could have possibly confused Minimum Acceptable Bid data and Entry Level bid data as having been quoted to me by Fuller: I wish to point out that I worked with both the data routinely before the sale. I was primarily concerned with data security subsequent to my telephone conversation with Fuller.

"I have made this statement to Mr. Martin in the presence of Morris J. Bullard, Special Agent, BLM, Wyoming State Office, Cheyenne, Wyoming. Mr. Martin has accurately transcribed my statements into the affidavit.

"I have read the foregoing statement consisting of 5 pages, each of which I have signed. I fully understand this statement and it is true, accurate, and complete to the best of my knowledge and belief. I made the corrections shown and placed my initials opposite each.

/s/ Douglas H. HILEMAN
May 6, 1983

Subscribed and sworn to before me
this 6th day of May 1983,
at the BLM, Wyoming State Office,
Cheyenne, Wyoming.

/s/ Michael J. MARTIN
Special Agent
U.S. Department of Interior
Office of Inspector General

/s/ Morris J. BULLARD
May 6, 1983



United States Department of the Interior

BUREAU OF LAND MANAGEMENT

Wyoming State Office
P.O. Box 1828
Cheyenne, Wyoming 82001

IN REPLY
REFER TO:

3400
(920)

May 6, 1983

Memorandum

To: Office of the Inspector General, U.S. Department of the Interior, Washington, D.C. 20240

From: Deputy State Director, Mineral Resources, Wyoming

Subject: Request for Statement

Mr. Michael Martin asked today, May 6, 1983, that I make a statement regarding two issues:

1. What information was my memorandum of March 26, 1983 based upon?

Answer: On March 25 Mr. Douglas Hileman came into my office and stated that he had been hearing rumors that the Minimum Acceptable Bid (MAB) values had been leaked to industry, but he was now convinced that was the case because he had talked with an industry representative who had the figures.

Also, on March 25 Mr. Tim MacGillvray informed me by telephone that he had talked with a representative from McGraw-Hill who had a copy of our MAB values down to the last decimal point.

Although no other true facts were available, there were many rumors that the MAB values had been released. So many, in fact, that it would seem cause for concern.

2. Discuss the fact that Mr. Hileman refused to surname the memo.

Answer: As I recall I had asked Mr. Hileman to prepare a memo alerting headquarters to the fact that the MAB values were out. Mr. Hileman said he didn't want to prepare such a memo because he needed to protect the confidence of his industry source. I then told Mr. Hileman that I would prepare the memo, but I wanted he and Mr. MacGillvray to review the memo to be sure the facts were correct. I did prepare the memorandum and asked each gentleman to review it. Each did review it. Mr. Hileman indicated the memo was accurate, but declined to surname the memo. Since Mr. Hileman was not the author, I didn't consider it an issue at the time. As I recall Mr. MacGillvray did surname the memo.

Note: On this date I have not been able to reach Mr. MacGillvray to absolutely confirm the above information related to his conversations with me. Also, I have not been able to confirm who surnamed the memo because of short notice.

Wayne E. Hull

Wayne E. Hull
May 6, 1983



United States Department of the Interior

OFFICE OF THE SECRETARY
Minerals Management Service
North Central Region
P.O. Box 2859
Casper, Wyoming 82602

In Reply Refer to:

MAR 17 1982

Memorandum

To: State Director, Bureau of Land Management, Wyoming
State Office, Cheyenne, Wyoming

From: Minerals Manager, North Central Region, MMS

Subject: REVISED Minimum Acceptable Bid Values - Wyoming Federal Coal Tracts

The listing below reflects the minimum acceptable bids (MAB) for each Wyoming Federal coal tract to be offered for public lease sale on April 28, 1982. The Spring Draw Tract [W-78634] is the only tract that has been revised. All MAB's reflect one-fifth payment of the bonus bid on the sale date and one-fifth of the bonus on each of the following four lease issuance anniversary dates:

<u>Federal Tract</u>	<u>MAB/Acre</u>	<u>Total MAB</u>
Little Rawhide Creek	\$22,753	\$12,059,090
Spring Draw	14,162	52,215,294
Fortin Draw	7,798	2,495,360
Rocky Butte	3,471	26,567,176
Duck Nest Creek	3,110	3,588,940
Kinta Creek	511	1,635,200
Timber Creek	25	91,725
Keeline	25	80,950

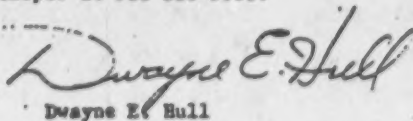
Acresages used for our calculations are the latest available legal descriptions (rounded) from your offices, and tonnages were calculated by MMS representatives on the Regional Tract Delineation team. Should any Federal tracts be subsequently withdrawn due to surface owner consent problems, we reserve the right to provide you with recalculated MAB values.

ENCLOSURE 2

Also enclosed is a copy of all the Federal coal tracts (Montana and Wyoming) that were evaluated by the Economic Evaluation Section. We submit this joint listing for your convenience, as we understand that the Notice of Sale will be developed by Montana/Wyoming adjudicators at your office the week of March 22, 1982.

With the exception of the adjustment and change of value for the Spring Draw tract, all other MAB's are identical to information previously submitted to both State Offices.

If you have other questions concerning this information, please contact the Economic Evaluation Section in Casper at FTS 328-5181.


Dwayne E. Hull

cc: State Director, BLM, Montana

<u>DERAL TRACT</u>	<u>MAB TOTAL</u>	<u>\$/ACRE</u>	<u>ACRES</u>	<u>CENTS/TON</u>	<u>RECOV. TONS</u>
1. SPRING DRAW	\$ 52,215,294	\$ 14,162/ac	3686.67	16.166	323 m
2. ROCKY BUTTE	\$ 26,567,176	\$ 5,471/ac	4855.54	5.970	445 m
3. ASHLAND (D-B)	\$ 12,292,343	\$ 6,307/ac	1948.75	10.330	119 m
4. LITTLE RAWHIDE CREEK	\$ 12,059,090	\$ 22,753/ac	530.00	13.399	90 m
5. NW OTTER CREEK	\$ 11,832,058	\$ 8,758/ac	1350.25	8.512	139 m
6. SW OTTER CREEK	\$ 7,681,552	\$ 4,216/ac	1821.42	5.909	130 m
7. SPRING CREEK	\$ 6,835,807	\$ 10,373/ac	658.26	19.531	35 m
8. NORTH DECKER	\$ 6,433,776	\$ 4,496/ac	1430.65	9.748	66 m
9. SOUTH DUCK NEST	\$ 3,588,940	\$ 3,110/ac	1153.07	2.510	143 m
10. FORTIN DRAW	\$ 2,495,360	\$ 7,798/ac	~~323.20~~ 430.00	5.545	45 m
11. KINTZ CREEK	\$ 1,635,200	\$ 511/ac	3200.00	0.847	193 m
12. TIMBER CREEK	\$ 91,725	\$ 25/ac	3668.81	0.056	164 m
13. KEELINE	\$ 80,950	\$ 25/ac	3237.00	0.048	170 m
14. COLSTRIP D	\$ 56,250	\$ 25/ac	2249.79	0.135	41½ m
15. COOK MOUNTAIN	\$ 52,400	\$ 25/ac	2095.90	0.029	178 m
16. COLSTRIP A-B	\$ 40,825	\$ 25/ac	1632.38	0.070	58½ m
17. COAL CREEK (SBA)	\$ 25,825	\$ 25/ac	1032.70	0.043	60 m
18. COLSTRIP, C	\$ 22,325	\$ 25/ac	892.56	0.118	18.9 m
19. WEST DECKER	\$ 1,000	\$ 25/ac	40.00	0.020	5 m

Inside Energy

formerly
Inside D.O.E.



An exclusive weekly report on federal energy activities

EXCERPTED

May 7, 1982

PRIME TRACTS IN POWDER RIVER BASIN DEVALUED BY INTERIOR BEFORE SALE

The public interest might have been better served in the Interior Dept.'s Powder River coal-lease sale if ranking officials had not rushed to experiment with a new bidding system, veteran department staffers familiar with the lease sale tell *Inside Energy*. While Interior Secretary James Watt has heralded the \$55-million, April 28 sale as a "resounding success," field and headquarters staffers state privately that the sale was only "marginally successful."

The department acted hastily in devaluing by more than \$40 million minimum acceptable bids (MAB) for three new prime coal tracts — Little Rawhide Creek, Spring Draw and Rocky Butte — that were expected to command the highest per-ton prices of any of the 13 tracts offered for lease, some Interior staffers assert (see chart on page 6). Interior's Minerals Management Service produced the MAB estimates in early 1982, but ranking officials say they were concerned about the validity of estimates for three tracts and sought to adjust them.

Switch made six weeks before lease sale. On March 19, Land and Water Resources Deputy Assistant Secretary David Russell and other Interior officials decided to abandon the MAB approach for the sale covering the Powder River Basin, which straddles Montana and Wyoming, sources say. As a result, the minimum acceptable values for the three tracts were revised downward as follows: Little Rawhide Creek, from \$12 million to \$7.2 million; Spring Draw, from \$52.2 million to \$25.8 million; and Rocky Butte, from \$26.6 million to \$11.2 million. These lowered values were then published as minimum "entry-level bids" in an April 1 *Federal Register* notice on the lease sale.

Polymakers overreacted. The decision to lower the values for the three coal tracts, which contain 858-million tons of recoverable coal, may have been made prematurely, say officials of the MMS, U.S. Geological Survey and Bureau of Land Management. The MAB estimates made by MMS are based on conservative assumptions and were used in federal lease sales until the Powder River tracts were offered. Interior staffers observe that the department stuck by MAB estimates in seven of the 11 tracts receiving bids. And bids on the seven tracts exceeded the MABs.

Rather than moving immediately to adjust the value of the Little Rawhide Creek, Spring Draw and Rocky Butte tracts, the department could have offered the leases for sale at the levels set by the MABs. Then, if the leases didn't sell, the minimum bids could have been adjusted downward and the leases offered later this year in a separate sale, say some department officials.

Interior action defended. Russell agrees that the leases could have been offered for sale again if they had a higher minimum-bid threshold and were not sold. Furthermore, he told *Inside Energy*, there is no reason why the experimental method for determining the fair market value of federal coal put up for lease couldn't have been deployed in a smaller offering — as opposed to the largest lease sale ever conducted by Interior.

Nevertheless, the department chose to deploy on an experimental basis for the first time the "entry-level bid" procedure, he said, out of a desire to meet the demand for new federal coal leases in the Powder River Basin. Russell observed that there are industry expressions of interest for 6.1-billion tons of coal in the region.

In addition, Russell explained that the initial MAB values were lowered in part to deal with the uncertainties of the MMS estimates, shaky comparable-sales data and a desire to assure their potential bidders weren't scared off by an unreasonably high minimum bid. And under the "entry-level-bid" procedure, the department doesn't determine the fair-market value of the coal until the lease sale has been held. Previously, Interior has made this determination prior to the sale through the MAB process. The effect of the action is to allow the bids submitted on tracts at any given sale to influence Interior's determination of the value of the coal up for auction. "The MAB process relied on just the long-used, discounted-cash-flow formulas, comparable-sales data and official judgment," Russell noted.

MAB data leaked to industry. However, officials in the field and at headquarters believe that Interior officials' actions may have been motivated by outside factors. In particular, five separate officials, as well as people affiliated with the coal industry, report hearing that confidential MAB information was leaked to industry before the publication of the sale notice in April.

One industry consultant told *Inside Energy* that information was leaked to some coal companies in Denver by an Interior official. Normally, this information is not made available to the public until a sale notice is published. The effect of releasing it prematurely could be to spark industry lobbying to lower prices before the minimum bids are set in concrete through publication in the *Federal Register*, some Interior officials say.

Interior received no feedback. Russell states that the department's actions were not the result of industry complaints about the initial MABs set by MMS. He says he received no feedback from industry on the

POWDER RIVER REGIONAL COAL LEASE SALE RESULTS

Tract name	Acres	Millions of tons	Initial MAB* value/ tons per ton	Entry-level entry notice/ cents per ton	High bid cents per ton	Bidders
Little Rawhide Creek	330	90	\$12,060,000/13.44	\$ 7,308,000/8.84	\$ 7,400,000/8.31	Meadowlark Farms
Spring Creek	639	33	No bids	—	—	No bids
Spring Draw	3,687	323	\$3,315,000/16.3	\$5,808,000/8.8	\$3,900,000/8.0	Shell Oil
North Decker	1,431	66	No bids	—	—	No bids
Rocky Butte	4,836	443	\$8,600,000/6.0	\$7,300,000/7.5	\$1,300,000/7.5	Texas Energy Services/ Northwestern Mutual Life Insurance
Duck Nest Creek	1,154	143	\$3,899,000/2.5	\$4,064,200/7.5	\$4,064,200/7.5	Meadowlark Farms
Kestline	3,338	170	\$1,000/0.05	\$1,000/0.05	\$470,000/1.0	Shell Butte
Coal Creek	1,033	60	\$5,825/0.04	\$5,825/0.04	\$51,000/0.6	Western Resources
Coalstrip AAB	1,633	58.3	119,400/0.01	119,400/0.01	121,788/0.01	Western Energy
Coalstrip D	2,250	43.2				
Coalstrip C	893	18.9				
West Decker	40	5	1,000/0.02	1,000/0.03	19,600/0.39	Montana Royalty
Cook Mountain	3,096	178	\$2,400/0.02	\$450,000/0.21	\$450,000/0.21	Thermal Energy
TOTALS:			\$94,743,625	\$83,491,475	\$54,688,638	

*Minimum acceptable bid

†Apparent high bidder.

MABs and adds that "If we find that someone has been leaking this information, we will have his job."

As for the department's statutory requirement under the Federal Coal Leasing Amendments Act to see that the government gets fair-market value (FMV) for the coal, Russell asserts that guidelines just implemented by Under Secretary Donald Hodel will assure that bids not meeting FMV requirements will be rejected. In contrast, MMS and USGS officials in the field and at headquarters believe it will be difficult to reject a bid under the "special circumstances" provision of the guidelines. That provision requires that the following factors be considered: the potential for a higher bid on the tract being reoffered in a later sale; the expected losses to the government if a borderline bid is accepted, or to a company delayed in mining coal; the impact of rejecting or accepting this bid on future bidding in other sales; the reliability of information regarding competition for the tract and its value; and the potential for the tract being bypassed and not developed. Countering allegations by staffers that this provision represents a "huge loophole," Russell says, "That's not the way I read it."

Low asking prices cited. Despite Russell's confidence that FMV will be captured by the government, some Interior staffers and a coal-industry representative believe that entry-level prices and "high bids" on some tracts were low. One USGS official observed that much of the reserve coal sold or traded between private companies in the Powder River Basin goes for 10¢ per ton. A Burlington Northern official observed that it isn't unusual for coal to sell at 15¢ per ton. The pricing of coal at 8¢ per ton for Little Rawhide Creek and Spring Draw may be appropriate, but the 2.5¢ minimum-entry-level bid set for Rocky Butte appears low, he said.

Except in the three cases where more than one company bid on tracts (Kestline, Coal Creek and West Decker), the bids received on all of the 13 tracts offered did not substantially exceed the entry-level minimum published in the *Federal Register* prior to the lease sale. Although these leases, including the three tracts that were devalued from initial MAB estimates, might attract a higher price under direct competition, it's likely that they will be accepted, officials say. Interior stated in its sale notice that the entry-level bid in most cases will be considered to represent fair-market value.

Tract competition not tied to multiple bids. While the lack of multiple bidders for each tract may have the appearance of insufficient competition, or the offering of an excessive amount of coal at the sale, Russell contends that's not the case. Competition, he says, must be measured not by the number of bids on a given tract but by the amount of interest in tracts. In the case of the Powder River Basin, competition is tempered by surface ownership overlying the coal deposit. If bidders do not own the surface, they must make an arrangement with the owner, he said. Also, in many cases only one company is in a position to develop a tract, he said.

And Russell has problems with the notion that Interior, in its quest for a marketplace approach in coal leasing, should act like a market player. While amending the market prior to lease sales and adjusting lease offerings accordingly might serve to enhance government revenues, it could tend to restrict supply, he says. That runs counter to the Reagan administration's policy of trying to enhance private-sector access to federal coal reserves.

Leasing schedule won't be slowed. A soft market exists in the West. It's caused by the presence of an estimated 250 undeveloped federal coal leases in the U.S., substantial excess coal-production capacity and a lack of orders for new coal-fired power plants, Interior and industry officials say. This and the minimum entry-level bids received on most of the tracts auctioned in the Powder River sale, Russell says, won't cause the department to slow the pace of its leasing program.

Russell anticipates that the leases not offered in the April 28 sale because of surface-owner problems may be redelineated and offered as early as June. The department may also continue to apply the "entry-level-bid approach" to the larger San Juan (N. Mex.) sale scheduled to take place in 1983 along with the Fort Union (Mont. and N. Dak.) and Uinta (Utah) lease sales, he says. — Mark Crawford

THE

FEDERAL COAL MANAGEMENT PROGRAM

AND THE

DEPARTMENT'S COAL LEASING POLICY

Prepared by the
Department of the Interior
Bureau of Land Management
May 1983

TABLE OF CONTENTS

	<u>PAGE</u>
I. INTRODUCTION	1
The Past Decade	1
Program Goals	3
Program Configuration and Recent Coal Production	4
The Growth of Western and Federal Coal Production	4
II. FEDERAL COAL LEASING	9
Monopolist	9
Production Goals	10
Leasing Levels	11
Market Demand	12
Compensation and Allocation	14
III. HISTORY AND BACKGROUND	17
Moratorium	17
NRDC Lawsuit	17
New Legislation	18
Existing Federal Coal Leases	18
IV. COMPONENTS OF THE REGIONAL LEASING PROCESS	20
Land-Use Planning	20
Activity Planning	20
Regional Leasing Levels	20
Lease Sale Procedures	21

TABLE OF CONTENTS (CONT'D)

	<u>PAGE</u>
Preference Right Lease Applications	21
Leasing By Application	23
Other Provisions	23
V. COAL PROGRAM REVIEW	24
VI. COMPETITIVE LEASE SALES SCHEDULED SINCE JANUARY 1981	28
Southern Appalachian Coal Region	28
Fort Union Coal Region	28
Powder River Coal Region	29
Green River-Hams Fork Coal Region	29
Uinta-Southwestern Utah Coal Region	29
San Juan River Coal Region	30
VII. PRODUCTION AND ROYALTY	31
VIII. PROJECTIONS OF FUTURE LEASE SALES THROUGH FY 1985	32
Anticipated Results	32
Development Prospects of Existing Federal Leases	34
Fort Union Region	34
Powder River Region	35
Green River-Hams Fork Reigon	36
Uinta-Southwestern Utah Region	37
San Juan River Region	38

TABLE OF CONTENTS (CONT'D)

	<u>PAGE</u>
Regional Summary	38
Demand for Additional Coal Reserves	39
IX. PROPOSED LEASING MORATORIUM	41
X. CONCLUSION	43
Appendix A -- Comments from Other Agencies and Departments Concerning Federal Coal Leasing Levels	45
Appendix B -- Tables	46
1-a - Future Lease Sales in FY 1983 and FY 1984	47
1-b - Coal Activity Planning Completion Dates	48
1-c - Regional Coal Lease Sale Schedule	49
2-a - Tracts Sold in All Regional Sales (January 1981 through October 1982)	50
2-b - Bonus Bids From All Regional Sales (January 1981 through October 1982)	51
2-c - Analysis of High Bonus Bids From All Regional Sales (January 1981 through October 1982)	52
3-a - Producing Federal Coal Leases By State: FY 1982	53
3-b - Producing Federal Coal Leases By Region: FY 1982	54
3-c - Federal Coal Production, Production Value, and Royalty Value -- Fiscal Years 1973 through 1982	55
3-d - Royalty Revenues from Federal Coal Leases, By State: Fiscal Years 1965 through 1982	56
4-a - Number of Leases, Estimated Recoverable Reserves by State: April 25, 1983	57

LIST OF TABLES

	<u>PAGE</u>
4-b - Number of Leases, Estimated Recoverable Reserves by Region: April 25, 1983	58
4-c - Surface Acreage of Leases, by State: April 25, 1983	59
4-d - Surface Acreage of Leases, by Region: April 25, 1983	60
5-a - Acreage of PRLA's — September 30, 1977 and April 1, 1983	61
5-b - Leases Issued From PRLA's — September 30, 1977 through April 1, 1983	62
5-c - PRLA's Issued, Withdrawn or Rejected from September 30, 1977 through April 1, 1983	63
6-a - Federal Coal Production and Lease Acreage	64
6-b - Total United States Coal Production and Federal Production in Million Tons by State: Calendar Years 1979 through 1981	65
7-a - Anticipated Sales and Bonus Bids	66
8-a - Projected Federal Lease and Mine Development Potential of Leases Issued as of 1980 in the Five Active Western coal Regions	67
8-b - Total Regional Productive Capacity, Production Forecast and Reserve Demand Estimates for 1995	68

I. INTRODUCTION

Energy is the Achilles' heel for America, whether speaking of consumer interests, national defense interests, or international affairs. Coal development can assist in the strengthening of America through the creation of jobs and economic security; fuel for industry or for electricity to heat and cool our homes, hospitals, and schools; and coal can contribute, through exports, to our balance of trade. The Federal Government, through sound management of its coal resources, can make an enormous contribution to American energy independence.

In terms of resource ownership, the Federal Government is a monopolist. In the West, over 80 percent of the coal is controlled by the Federal Government -- 60 percent through direct ownership and 20 percent because of interspersed land ownership patterns. Of the Federal lands which contain 200 billion tons of coal reserves, only 18 billion tons have been leased to supply the American consumer.

The Interior Department has responsibility for leasing Federal coal lands and has developed an environmentally sensitive and economically sound leasing program. The Federal Coal Management Program is designed to give the Nation a greater assurance of being able to meet its national energy objectives; provide a means to promote a more desirable pattern of coal development with environmental protection; assure that State and local governments participate in decisions regarding where and when Federal coal production will take place; and increase competition in the coal industry.

Through the Federal Coal Management Program, coal leasing and development are being done in an environmentally sensitive manner which minimizes the economic and administrative burden on both the public and the Government while assuring a fair return to the Treasury for use of the Nation's coal resources. Some history of the development of this program provides insight.

The Past Decade

The current structure of the Federal Coal Management Program is the result of a series of events that began in 1970. In 1970, a Bureau of Land Management (BLM) study revealed that Federal coal leases were being obtained for speculative purposes and that production from leased Federal lands was inconsistent with the number of acres under lease. To illustrate, in 1945, 80,000 acres were under lease providing 10 million tons of coal annually. By 1971, acreage under lease increased to 800,000, but production had decreased to 9.1 million tons annually. (On April 25, 1983, a total of 17.43 billion tons of coal reserves on 948,486 acres were under lease with production at 108 million tons in 1982.)

An informal moratorium was placed on new leasing in 1971 and, in 1973, a formal moratorium was instituted which allowed new leasing only to meet short-term needs.

In 1974, a draft environmental impact statement (EIS) describing the Energy Minerals Allocation Recommendation System (EMARS I) was published. The final EIS was released in 1975, but the preferred program was retitled the Energy Minerals Activity Recommendation System (EMARS II). The EMARS II program was adopted as policy in January 1976 and final regulations were published in January 1977. This policy was heavily dependent on industry and public nominations to identify the need for tracts for development.

Shortly after the adoption of EMARS II as Departmental policy, a lawsuit was filed alleging that, because of certain defects, the 1975 final coal programmatic EIS was legally inadequate (NRDC et al., vs Royston Hughes et al.).

On September 27, 1977, the U.S. District Court for the District of Columbia ruled that the EIS was inadequate, and the Department was therefore in violation of the National Environmental Policy Act (NEPA). Accordingly, the Department was enjoined from implementing the EMARS leasing policy and was directed to prepare a supplement to the coal programmatic EIS to meet the NEPA requirements.

During 1976 and 1977, legislative action also occurred that impacted the design of the Federal Coal Management Program. In 1976, the Federal Coal Leasing Amendments Act, which established specific rules to guide the development of Federal coal (including competitive leasing), was passed. In that same year, Congress enacted the Federal Land Policy and Management Act requiring that the Bureau and the Department ensure that all resource development decisions related to the public lands, including coal leasing, are made in cooperation with State and local governments as part of a comprehensive planning process. In addition, the Surface Mining Control and Reclamation Act of 1977 requires the Secretary to review Federal lands to determine whether they contain areas which are unsuitable for all, or certain types of, surface coal mining operations.

In 1977, a coal policy review was conducted within the Department which concluded that a new programmatic EIS would be prepared to fully consider the new legal requirements and to respond to the court order. The Department filed an appeal to the NRDC vs. Hughes decision (NRDC vs. Hughes, 454 F. Supp. 148 (D.D.C. 1978)) and reached a negotiated settlement, which was adopted as the June 1978 amended court order. The amended court order allowed more flexibility to issue coal leases to meet certain "short-term" needs until a new coal leasing policy could be established.

The result of the coal policy review was a new programmatic EIS published in April 1979, the adoption of a new comprehensive program in June 1979, and the issuance of final program regulations in July 1979. The program was further refined in July 1982 to strengthen the leasing methodology and again in January 1983 to add additional public participation through the coal State Governors and enhance the role of the regional coal teams.

Program Goals

The Federal Coal Management Program is designed to:

- A. Make ample supplies of coal available to the market in order to provide coal at competitive prices for the benefit of national energy consumers.
- B. Provide a range of alternative mining sites in order to promote the most efficient patterns of coal development with environmental protection.
- C. Assure that the State and local governments participate in decisions about where and when Federal leasing and production will take place.
- D. Increase the range of mining opportunities in order to stimulate competition in the coal industry.

The United States must reduce its vulnerability to new oil supply disruptions and must minimize key uncertainties about the Nation's energy future. As part of its overall minerals policy, the Department is facilitating the identification, exploration, and development of Federal energy resources — particularly coal — as a means of curtailing the foreign oil drain on the Nation's economy and enhancing national security. Opportunities to expedite coal and energy development are considered in the context of multiple-use resource management and established standards for environmental protection. Through the Federal Coal Management Program, coal leasing and development are conducted in a manner that minimizes the economic and administrative burden on both the private sector and the government while assuring a fair return to the Treasury for use of Nation's coal resource.

Additionally, as a means of stimulating the national economy, the United States must ensure that a competitive energy market is maintained domestically. In this endeavor, coal plays an integral part. The Federal Government, as a major owner of U.S. coal reserves ^{1/}, has to guard against creating any institutional barriers to a free coal market that would artificially cause high energy costs to the public.

^{1/} The Department, through the Bureau of Land Management (BLM), administers federally owned coal that is concentrated in six Western States (Colorado, Montana, New Mexico, North Dakota, Utah and Wyoming) and in smaller amounts in other States (e.g., Oklahoma and Alabama).

Program Configuration and Recent Coal Production

In January 1981, the Secretary of the Interior initiated steps for the development and use of the many resources in the realm of responsibility of the Department. This administration felt that the country's economic and national security were in jeopardy because of past failures to properly develop America's abundant natural resources, among the most important of these being coal. In 1981, less than 1 percent of Federal coal lands were under lease, and new leasing had been at a virtual standstill since 1971. The Nation was dependent upon foreign sources for 40 percent of its crude oil supply. By aggressively leasing more coal, this Nation can reduce this dependency on foreign supplies of energy and provide the American consumer energy at lower costs. Coal is a necessary component of the Nation's energy picture and coal leasing provides a positive benefit to all Americans.

In 1981, the Department issued 55 coal leases on 118,663 acres, compared to 26 leases on 19,938 acres during 1979 and 1980. The Department increased by 800 percent the tonnage of coal leased in 1981 and 1982 over 1979 and 1980. The Department leased 1.7 billion tons of coal in 1981 and 1982, compared to 211 million tons leased in 1979 and 1980. All of this has been achieved with proper environmental safeguards, land-use planning, open public participation and close consultation with State Governors, other agencies and Indian Tribes.

The Interior Department has scheduled one coal lease sale in Fiscal Year 1983 and five coal lease sales for Fiscal Year 1984 — in the Fort Union, San Juan River, Uinta-Southwestern Utah, Southern Appalachian, Green River-Rams Fork, and Powder River Coal Regions. These lease sales involve total proposed leasing levels in the range of 4.01 billion to 8.39 billion tons of Federal coal. The scheduled coal lease sales represent the culmination of several years of planning involving close consultations with the Western States included on regional coal teams. The lease sales for the San Juan River and Fort Union Regions will be the first regional lease sales in those regions since the Federal Coal Management Program was introduced in 1979.

The Growth of Western and Federal Coal Production

Since the OPEC price shock of 1973-1974, the United States has sought to expand domestic energy production. The area in which the greatest success has been achieved has been coal. Since 1973, there has been a 40 percent increase in U.S. coal production. Of this increase, 82 percent has come from the west; since 1973, western coal production has risen from 76 to 268 million tons per year. Western coal now contributes 33 percent of U.S. coal production. Federal coal has supplied almost half of the new western coal output. Since 1973, Federal coal production has risen from 14 to 104 million tons per year.

Despite its rapid growth, Federal coal production still lags behind the potential of Federal coal. Federal coal constitutes 60 percent or more of total western coal reserves and, because of land ownership patterns, the Federal Government indirectly affects another 20 percent. Yet, in 1981, Federal coal supplied 39 percent of western coal production. For more Federal coal to be produced, it must be available to companies seeking to form a new mine or expand an existing mine.

With the expansion of Federal coal production, the amount of Federal coal in mine plans has been increasing. This increase has caused a corresponding decrease in the amounts of leased Federal coal that is still uncommitted and thus available for new prospective mines. For all Federal coal, this amount of uncommitted coal has fallen by 119 million tons (2 percent) from 1979 to the present. This has occurred despite the leasing of more than 2 billion since 1981.

Some observers have suggested that this development is desirable -- that the Interior Department should seek to maintain a minimum inventory of leased but uncommitted coal. For the reasons presented in this report, the Department believes this leasing approach would be a serious mistake.

Interior's coal management program is primarily directed toward issuing new leases through a regional process and involves four major steps. The first step is land-use planning and public review, where lands acceptable for further consideration for coal leasing are identified in conjunction with other resource decisions. In the second step--activity planning--a schedule for coal lease sales in each region is selected and analyzed with full public participation in an EIS.

A leasing level for each region is selected by the Assistant Secretary in the third step of the program. The last step of the program sets out procedures for managing individual coal sales. From the time a tract is selected for sale until a lease is issued, several administrative and statutory requirements must be completed. They include: (1) obtaining written consent from qualified private surface owners over federally owned coal; (2) public participation and consultation with State Governors, the Attorney General, affected Indian Tribes, and surface management agencies; and (3) evaluating the results of the competitive lease sale to determine if fair market value is achieved and to select the successful bidders.

The fundamental changes reflected in the coal leasing program include:

- * Formal land-use planning with public involvement and Governor consultation;
- * Full examination of alternative leasing strategies and full disclosure of environmental effects and mitigation measures;

- ° Leases offered competitively with assurances for receipt of fair market value; and
- ° Stringent diligent development requirements. (If a new lease is not developed and producing in commercial quantities within 10 years of lease issuance, the lease is forfeited and returned to the Federal Government.)

In addition, emergency lease applications for areas within coal regions are considered in the interest of resource conservation for cases where Federal coal may be bypassed or where coal is needed to continue existing production or meet existing contracts. The program also contains provisions for the processing of pending preference right lease applications (PRLAs) that remain from the pre-1976 prospecting permit-preference right leasing system. The Department has adopted a work program which will process these remaining PRLAs to the point of decision by December 1, 1984.

The 1982 changes to the coal leasing program provide many benefits over the old program, particularly in the following areas:

A. Economics

- ° Accelerated leasing with new environmental safeguards and stringent diligent development requirements prevents long-term speculation by industry and allows environmentally preferable coal leases to compete with older leases that do not comply with current environmental standards. Consequently, the costs associated with environmental damage are minimized.
- ° Continued leasing keeps the value of leases competitive and prevents industry from gaining windfall profits on old leases which would result from restricting the market.
- ° New leasing reduces speculation via lease transfer or reassignment because industry or supply contractors can now shop competitively in the marketplace for new leases.
- ° By offering leases competitively and requiring industry to submit sealed bids, the new program forces industry to disclose what they are willing to pay and helps ensure receipt of fair market value.
- ° By discontinuing the practice of leasing as a monopolist, the Federal Government can help reduce the price of electricity, manufactured goods, and inflation and can eliminate the hidden tax consumers otherwise pay.
- ° The leasing program provided \$123 million in bonus revenues from January 1981 to October 1982 and \$101 million in royalty revenues in FYs 1981 and 1982. These revenues are shared 50/50 with the States.

B. Environment

- * All new leasing has environmental safeguards. Environmental impact statements are prepared for:
 - Program development and adoption.
 - Resource management plans or land-use plans for regional coal sales prior to sale.
 - Mine plans submitted for review and approval.
 - Reclamation plans modified to reflect changing technology.
- * New coal leases with environmental safeguards compete with old leases that were issued prior to new environmental standards.
- * The current program has more stringent mitigation standards and requirements than ever before.
- * New leasing allows clean burning low sulfur coal to compete with lower quality resources.

C. Public Participation

- * New leasing is done with full disclosure and full public participation through the planning and EIS processes.
- * Governors are consulted and the Secretary publishes his reasons for accepting or rejecting the Governor's recommendations.
- * Regional coal teams are established to oversee the leasing program and provide an open forum for public participation. Recommendations developed at the local level guide the program.
- * Planning and EIS processes are developed openly to provide full disclosure to the public and provide opportunity for the public to make comments and recommendations.

D. National Economy - Jobs

- * Developing domestic coal resources provides for employment in America rather than in foreign countries. Specific examples directly affected are mining, transportation (e.g., railroads), electric utilities, steel and metals, and heavy equipment manufacturing. Industries indirectly affected include automobile manufacturing, light equipment manufacturing, and construction trades. Local economies also directly benefit.

- * Coal development can displace imported fuels currently used for power plants or heat processes thereby improving national economic strength by reducing imports.
- * Reducing costs at home through competitive markets improves America's ability to compete in foreign markets and with foreign manufacturers in American markets.

E. National Security

- * Accelerated leasing and development of domestic resources reduces America's dependence on unstable foreign imports.
- * Coal can displace fuel oil in areas such as electricity generation or other heat processes and thereby substitute for an energy source where we have hundreds of years of reserves rather than remain dependent on an uncertain supply.
- * Synthetic fuel development for national security is dependent on new coal leasing.

F. Consumer Interests

- * Accelerated leasing increases market competition and eliminates the hidden tax American consumers have paid because of monopolistic pricing of Federal coal reserves.
- * Accelerated leasing is expected to result in achieving our goal of lower consumer prices for:
 - Oil and gas.
 - Electricity.
 - Steel and metal products.
 - Manufactured goods.

In summary, leasing to meet the demand for reserves in essence means leasing to ensure that adequate supplies of uncommitted coal reserves are maintained so that the most competitive source of coal production can be found and developed for the benefit of the American consumer.

This report examines the background and history of the Federal Coal Management Program and provides the rationale behind the policies of this administration for managing this resource. Specifically, it provides an analysis of vital issues which center on the environment, the economy and the role of the Federal Government as a monopolist, public participation, national security, jobs, and revenues from the program.

II. FEDERAL COAL LEASING

The Department's objective in providing broad offerings of Federal coal leases is not to create a surplus or shortage of coal resources on the market, but to lease sufficient coal resources to allow for efficient coal development. Coal resources that are not leased are not available to compete for contracts to supply coal to coal users. The Department wants to be certain that enough coal is leased to ensure that the market for coal supply contracts will be fully competitive. Since 1979, the General Accounting Office, Council on Wage and Price Stability, Department of Energy, and Department of Justice, as well as private consultants working for these agencies, have vociferously argued for this policy based on their concern that a restrictive leasing policy would have the effect of increasing coal prices to consumers. (See Appendix A.) Their reasoning contains two key elements. First, coal is not a homogeneous commodity; therefore, it is essential that coal resources that can be produced most efficiently for each user be available, i.e., under lease. Second, to insure adequate competition, there must be a sufficient number of producers to meet the needs of each individual coal user.

Monopolist

If the Department restricts the quantity of coal resources offered, higher prices (bonus bids) could be obtained because the Federal government has the ability to act as a monopolist in the market for coal resources; the Federal government owns approximately 60 percent of western coal resources and controls another 20 percent by virtue of its land ownership patterns. A policy of restricting supply by restricting the quantity of coal resources offered for sale would not be in the public interest. The demand for coal would still be satisfied in the market place without Federal coal leasing. However, the demand would be satisfied at a higher cost to the consumer. By restricting Federal coal leasing, the western supply of available resources is potentially reduced by 80 percent. As with any commodity, when coal resources become reflectively scarce (not available) the price will increase. With less coal available and less competition among the coal suppliers (coal companies), utilities will pay higher prices for the coal. The higher cost to the utilities is then passed on to the consumer. The cost to the consumer will also be increased under a policy of restricted leasing in situations where the unleased Federal resource is the most cost effective to develop; Development of coal resources will occur to meet the consumer demand; however, it will occur on tracts that have a higher development cost.

This point of shifting development intra- and interregionally is very significant. The actual quantifying of what the exact shifts will be and what will be the associated cost to the consumer is impossible to accurately estimate. The next section "production goals" point out some of the weaknesses in attempting long range modeling of coal supply and demand, of which development is a component. Section VIII ("Development Prospects of Existing Federal Leases") does discuss the Department's

view of the future for each of the coal regions and the scheduled FY 1983 and 1984 sales. However, these estimates are not on a leased tract by tract basis, much less a detailed discussion of private and unleased Federal coal tracts.

When a commodity is demanded in a perfectly competitive market, the market will respond by satisfying that demand in the most cost efficient manner. As is already recognized, the coal market is not perfectly competitive, most notably because of the monopoly power of the government. In the case of the coal market when coal is demanded that market will respond by satisfying that demand in the most cost efficient manner available. Unleased Federal coal that is not available cannot compete to satisfy the market demand. With the Department's extensive land-use and activity planning process, it can take 4 years to bring a Federal coal tract to the point that it can be offered for lease. This is far too long a lead time to respond to market forces. The Department recognizes its inability to know what the exact future coal demand will be and which tracts are the most cost efficient to meet that demand. The market's ability and central planning's inability to allocate resources effectively is well documented. In response to this, the Department has made a conscious decision to minimize the government's role in allocating coal resources. Within the confines of the Treasury receiving fair compensation for the resource, protection of the environment and concerns raised by the State Governors, the market will be allowed to determine which tracts will be available to compete for satisfying the demand for reserves.

Production Goals

Even in situations where the intent is not to restrict Federal coal leasing but to tailor the supply to the projected need, there are high costs to the consumer. This "one-to-one" approach relies heavily on the accuracy of the projection tools utilized by the government. It can take 4 years for the government to offer a tract for lease and up to 7 additional years for a company to bring a large western coal mine into minimal production. This forces the government to project at least 10 years into the future with pin-point accuracy.

Estimating with any degree of accuracy the U.S. and world energy supply and demand for just a few years is next to impossible. Yet what is required in a tailored "one-to-one" approach to Federal coal leasing is to make projections 10 years into the future, plus identify the least cost tracts and match the potential consumers with those least cost tracts. Any inaccuracies or miscalculations in any of these requirements leads to the same results as restricting the available supply -- higher costs to the consumer.

Under the Federal Coal Management Program introduced in June 1979, the Department of Energy (DOE) set production goals for western coal regions. The Interior Department then estimated the amounts of coal that would be

forthcoming from non-Federal sources and existing Federal leases -- and thus would not depend on any further Federal coal leasing. If this already "committed" coal production fell below the DOE production goal for a region, only then would new Federal leasing be required in the region to make up the "shortfall".

Unfortunately, the precision called for in this procedure strained government projection capabilities. Production goals varied substantially as expectations for future coal production shifted. As an extreme example, DOE projections for U.S. coal to be used in synthetics production in 1990 went from 33 million tons in 1978, to 28 million tons in 1979, and then all the way up to 198.3 million tons in 1980. Estimates of already committed production also proved highly variable.

Reflecting these concerns, the Antitrust Division of the Justice Department, the Council on Wage and Price Stability and the Department of Energy (DOE), in 1980, called for modifications in the DOI leasing approach to allow greater leasing. (See Appendix A.)

Leasing Levels

In 1981, the Interior Department shifted the emphasis in coal leasing from exact government planning to responding to the market so that the problems of trying to supply exactly enough leases to meet some specific production goal could be overcome. Under this change in philosophy, an adequate inventory of uncommitted Federal coal reserves should be maintained, allowing new coal buyers to select from leased reserves held by a number of different coal mining companies and located at alternative sites. The resulting competition among Federal lessees to obtain new contracts will result in lower prices for utility and other new coal buyers; it will also give new coal buyers more leeway to find the lowest cost mining and transportation sites and the types of coal which best meet their specific needs. In short, new leasing is called for whenever there is a need to replenish the inventory of existing nonproducing and uncommitted leases available for new production commitments. The market, not the government, will then determine the attractiveness of these new and uncommitted leases, and when and to what degree they will be brought into production.

There is no easy mechanical formula for determining the correct level of uncommitted leased reserves to provide adequate industry competition and adequate mining-site selection alternatives. The Interior Department considers numerous factors in making the leasing level decision. One key factor is the extent to which previously leased reserves are already committed to existing mine plans and thus would be unavailable to form new mines or to expand the area of an existing mine. Another factor is the projection for future coal production (1990 and 1995) in each coal region. This information can be translated into an expected rate of new contracting, which will have to draw upon an existing inventory of already leased but still uncommitted and available Federal coal reserves. Expressions of interest by industry indicate the potential demand for new mine

sites or expansion of existing sites. Environmental concerns about particular sites or the impacts of cumulative coal development levels in a region may require that the levels of coal leasing be limited in certain areas and/or for the whole coal region.

The Interior Department examines all the factors affecting the inventory level of uncommitted leased Federal reserves that it seems desirable to maintain. Reflecting the considerable uncertainties, a range of possible leasing levels is developed. This range is developed in close consultation with regional coal teams, which include representatives of affected State Governors. Federal and State officials have been able to reach basic agreement in all past coal lease sales and have worked very closely on the preparations for the Fiscal Year 1984 sales (see Appendix B, Tables 1-a, 1-b, and 1-c).

In an effort to not restrict the supply of reserves available to satisfy the demand for coal resources, the Department approaches each sale with a large supply of reserves early in the process. The leasing level is the first cut at what will eventually be offered for lease.

The concept of leasing levels is based on the idea that the Department will give companies the opportunity to bid on a wide range of coal tracts. However, before giving companies the opportunity to compete for the resources the coal tracts to be offered are evaluated in a regional EIS. After the EIS is completed, tracts that are not desirable for leasing are not recommended by the RCT and are removed from the tracts to be offered for lease.

Market Demand

An effective way to monitor market demand in order to determine what is the appropriate quantity to offer for lease is to observe the prices the in situ coal resource is receiving in the market place. An oversupply or undersupply of coal resources on the market will manifest itself in a dramatic drop or increase in the prices (bonus bids) the Department receives for its coal resources (see Appendix B, Tables 2-a, 2-b, and 2-c).

Two common ways of evaluating the bonus bids to assess the compensation received are on a per acre and per ton basis. A per acre measure has the obvious disadvantage of being a measure of the surface acreage with little relationship to the coal resource that lies beneath. Analyzing the price on a per ton basis is a somewhat better measure. However, coal resources are not homogeneous commodities. The most significant difference is the energy value (BTU) of the resource. Commonly leased Federal coal resources range from a low of 7,000 BTU's per pound in the Fort Union Coal Region to over 14,000 BTU's per pound in the Uinta-Southwestern Utah Coal Region.

An analysis based on cents per BTU captures this difference but does not address many of the other significant differences. The best measure for capturing all these differences is the price in the market place that the coal itself brings. For example, mined coal that has relatively high BTU and low sulfur content will generally receive a higher price in the market place than coal that has a relatively low BTU and high sulfur content. The market price captures, at one time, all the characteristics that add to or subtract from the value of the mined coal.

Appendix B, Table 2-c, the last column, gives the average high bonus bid for the resources as a percentage of the current mine mouth selling price of coal for the regions where lease sales have been held. For the three larger western sales held to date, the average high bonus bid stated as a percentage of the current selling price of mined coal has remained relatively constant (between .5 and .7 percent of the current market price of the coal). This has occurred in spite of the variation in average BTU content (a low of 8,000 BTU's per pound in the Powder River Region and a high of 14,000 BTU's per pound in the Uinta-Southwestern Utah Region), and the chronology of the sales, with the first Green River-Hams Fork sale in January 1981 and the last Powder River sale in October 1982. This consistency in the average high bonus bid is very significant in analyzing claims of overleasing. The average compensation that the Federal Government has been receiving through bonus bids has not been forced down due to overleasing as some critics claim.

Previous analysis of the Department's sales have commonly utilized cents per ton as the unit to compare the bonus bids. This has lead to a significant amount of criticism of the recent regional coal lease sales, most specifically the first round Powder River regional sale, as examples of overleasing. Analysis of sale results on a cents per ton basis can be very misleading. (The average consumer would not be deceived into believing a pound of T-bone steak should cost the same as a pound of round steak, even though they are both beef products.) The price that a ton of mined Powder River coal can bring in the market place (\$7.50 per ton) does not compare with the price Uinta mined coal can command (\$28.00 per ton). Given this difference in mine mouth value of the coal, it is only reasonable to assume that the value of the coal resource before mining is also not identical.

By evaluating the sale results for the three Western sales held from January 1981 through October 1982 on a percentage of market price basis, it is clear that overleasing is not occurring. Actually, a case can be made that the opposite is quite possibly true. In the Southern Appalachian Region, Federal coal is a very minor fraction of the total available

coal resources. The Department has no monopoly power in this region and must take the market rate for its coal resources or not lease it. As Table 2-c, Appendix B, shows, the average high bonus bid as a percentage of price is very low (.076 percent) in the one region where the Department's sales cannot significantly influence the market price for coal resources; This information could actually imply that the Department is still under-leasing in the western regions and collecting monopoly rents.

Two other factors that should be considered in assessing coal resource demand are market analysis for each coal region done in conjunction with formulating the regional leasing levels and industry's expressed interest in leasing coal (see Appendix B, Table 1-a). The projected coal needs, along with other factors, are considered in setting the regional leasing level for each region. The RCT's recommended leasing levels indicate a significant need for coal reserves in these 6 regions. From the analysis of the leasing levels, the leasing needs for these regions could be from 5 to 11 billion tons of recoverable coal reserves above what is already under lease (see previous discussion on leasing levels).

Industry's formal expressions of leasing interest also indicate a high level of demand for coal reserves. Through this expressions of interest process, companies have indicated a desire to lease or to have offered for lease 10 to 17 billion tons of additional recoverable coal reserves in the next few years. Most of this additional coal is expected to be used to supplant less economically and environmentally desirable coal resources that are already under lease (see section VIII for further discussion). The new leased tracts would have a better chance of being mined because they are more efficient. Old leases on the less efficient tracts would eventually be relinquished.

The Department's objective is to provide for leasing sufficient quantities of coal resources to allow for efficient development. To do this, the Department must respond to the market demand for coal reserves. Market analysis by the Department, industry's expressions of interest and, most significantly, the price the Department is receiving for the resources all indicate that the market demand for coal resources has remained relatively high.

In responding to the market in this manner, the Department recognizes that not all tracts offered will be leased. It also recognized that not all leased tracts will be developed. Following 10 years of nondevelopment, these tracts will be returned to the Department's control under the diligent development provisions mandated by Federal Coal Lease Amendments Act of 1976.

Compensation and Allocation

Since the early 1970's, some individuals and organizations have been concerned with the sale of Federal coal development rights without adequate compensation. Many of the requirements in the Federal Coal Leasing Amendments Act of 1976 (including only competitive leasing,

changes in the royalty and rental rates, and stricter enforcement of diligent development requirements) were included to address this concern over adequate compensation. The inability to resolve this compensation issue, plus that of resource allocation, have hampered the Federal coal management program for many years.

The Federal Government, as lessor, receives compensation for its coal leases in several ways. Direct compensation is viewed in the form of royalties on coal production, annual per-acre rental payments, and cash bonus payments. Where the lessee obtains above normal returns after making these payments, additional compensation is provided to the Federal Treasury in the form of higher corporate income taxes.

The royalty and per-acre rental rates are fixed prior to the lease sale. In general, for tracts which will go into production in time to meet the 10-year diligence requirement, the royalty payment (set at 12 1/2 percent of production value for surface-mined coal) will capture the greatest portion of the lease revenues obtained by the government. The Department's fair market value policies are aimed at ensuring that the cash bonus payment captures for the government a fair share of the lease value which remains after accounting for the lessee's royalty and rental obligations. This is in accordance with the Uniform Appraisal Standards for Federal Land Acquisitions (Interagency Land Acquisition Conference, 1973) which defines "fair market value" as "the amount in cash, or on terms reasonably equivalent to cash, for which in all probability the property would be sold by a knowledgeable owner willing but not obligated to sell to a knowledgeable purchaser who desired but is not obligated to buy."

Prior to August 1976, allocating the resource took two basic forms -- competitive and non-competitive leasing. In 1976, Congress required that all leases be acquired competitively. With a few exceptions, competition has been in the form of bonus bids at auctions. Once the high bidder meets the qualifications for holding a Federal lease and the high bid is determined to achieve fair market value, the lease is issued to that company or individual. Development and production of the leased coal can then occur, subject to the terms and conditions of the lease and acquiring all the required Federal, State, and local permits.

The bulk of Federal coal lease revenues have been in the form of royalty payments. Most leases issued prior to August 1976 that have not been readjusted, have royalty rates ranging from 15 to 22.5 cents per ton. Most post-1976 leases have royalty rates of 8 percent of production value for underground mines and 12.5 percent of production value for surface mines. A royalty rate based on a percentage of production value will depend on the selling price of the coal. For surfaced mined coal, the effective royalty rate of new leases (those with 12.5 percent royalty rates) is \$1.00 to \$4.00 per ton of production at current prices. Powder River has the lowest effective rate (about \$1.00 per ton) due to its lower value coal. However, this is still 4 to 5 times higher than the royalty rate on old unreadjusted leases in the region.

The significance of this royalty rate change can also be appreciated in times of high inflation. Where the royalty rate is based on cents per ton and inflation occurs, the compensation paid the government is continually being reduced in real terms. For leases with royalty rates that are a percentage of the production value, the real compensation paid the government tends to remain constant. In FY 1982 \$61 million were collected in royalties from a production of 104 million tons. However, in FY 1975 production was approximately half that amount (44 million tons) but royalties collected totaled less than \$5 million (see discussion in "production and royalty" section and Appendix B, Tables 3-a, 3-b, 3-c, and 3-d). With continued readjustments of the pre-1976 leases to a percentage basis there will continue to be significant increases in the royalties collected.

Royalty payments for the development rights to the coal resources have proven to be a very efficient and lucrative form of compensation for the government. However, this compensation occurs only when production occurs on the lease. Rentals on a per acre basis are collected as an attempt to acquire compensation when production does not occur. On unadjusted pre-1976 leases rental rates generally range from 25 cents to one dollar per acre per year, and apply only when the lease is not in production. Except in a few instances, post-1976 leases have an annual rental rate of 3 dollars per acre and apply whether production is occurring or not. This form of compensation has only proven mildly successful in generating revenue. The relatively low annual rental rate has not significantly increased the compensation due the government during times of non-production.

III. HISTORY AND BACKGROUND

The current structure of the Federal Coal Management Program is the result of a series of events that began in 1970 and included direction from the three branches of the Federal Government. In 1970, a BLM study revealed that Federal coal leases were being obtained for speculative purposes and that production from leased Federal lands was inconsistent with the number of acres under lease. To illustrate, in 1945, 80,000 acres were under lease providing 10 million tons of coal annually. By 1971, acreage under lease increased to 800,000 but production had decreased to 9.1 million tons annually.

Moratorium

As a result, an informal moratorium was placed on new leasing in 1971 and, in 1973, a formal moratorium was instituted which allowed new leasing only to meet short-term needs. Issuance of prospecting permits was also suspended, and a new long-term leasing policy development effort was begun (including the preparation of a national programmatic EIS).

In 1974, a draft EIS describing the Energy Minerals Allocation Recommendation System (EMARS I) was published. The final EIS was released in 1975 but the preferred program was retitled the Energy Minerals Activity Recommendation System (EMARS II). The EMARS II program was adopted as policy in January 1976 and final regulations were published in January 1977. This policy, which was heavily dependent on industry and public nominations to identify the need for tracts for development, lifted the moratorium on new major Federal coal leasing. The limited short-term policy was to remain in effect until a new competitive system was fully operational.

NRDC Lawsuit

Shortly after the adoption of EMARS II as Departmental policy, a lawsuit was filed by the Natural Resources Defense Council, Inc. (NRDC) — NRDC et al., v. Royston Hughes et al., 437 F. Supp. 981 (D.D.C. 1977). The NRDC alleged that, because of certain defects, the 1975 final coal programmatic EIS was legally inadequate. Specifically, it was charged that the EIS did not adequately describe the coal leasing program, it did not consider proper alternatives, it was done in a manner which deprived the public of an opportunity to comment on the proposal, and it failed to consider whether there was a need for resumption of Federal coal leasing.

On September 27, 1977, the U.S. District Court for the District of Columbia ruled that the EIS was inadequate, and the Department was therefore in violation of the National Environmental Policy Act (NEPA). Accordingly, the Department was enjoined from implementing the EMARS leasing policy with two very limited exceptions for short-term leasing. In addition, the Department was directed to prepare a supplement to the coal programmatic EIS to meet the NEPA requirements.

New Legislation

During 1976 and 1977, legislative action also occurred that impacted the design of the Federal coal management program. In 1976, the Federal Coal Leasing Amendments Act, which established specific rules to guide the development of Federal coal (including competitive leasing), was passed. In that same year, Congress enacted the Federal Land Policy and Management Act requiring that the Bureau and the Department ensure that all resource development decisions related to the public lands, including coal leasing, are made in cooperation with State and local governments as part of a comprehensive planning process. In addition, the Surface Mining Control and Reclamation Act of 1977 requires the Secretary to review Federal lands to determine whether they contain areas which are unsuitable for all, or certain types of, surface coal mining operations.

In 1977, a coal policy review was conducted within the Department, and it was concluded that a new programmatic EIS would be prepared to fully consider the new legal requirements and to respond to the court order. The Department filed an appeal to the NRDC v. Hughes decision (NRDC v. Hughes, 454 F. Supp. 148 (D.D.C. 1978)) while pursuing a negotiated settlement with NRDC. The negotiated settlement, which was adopted as the June 1978 amended court order, allowed more flexibility to issue coal leases to meet certain "short-term" needs until a new coal leasing policy could be established if, in fact, there was a need for the coal.

The result of the coal policy review was a new programmatic EIS published in April 1979, the adoption of a new comprehensive program in June 1979, and the issuance of final program regulations in July 1979. The regulations were revised in July 1982 to streamline the leasing process and make it less burdensome on the industry, the public, and the government. In January 1983, interim final rules were published to clarify the role of the regional coal teams and to further identify areas for Department/State consultation in program decisions.

Existing Federal Coal Leases

As of April 24, 1983, 627 Federal coal leases had been issued. Of those 627 leases 115 were reported to have paid production royalty in FY 1982 (see the "Production and Royalty", section VII) on a total of 17.43 billion tons of Federal coal reserves covering 948,486 acres under lease. Appendix B, Tables 4-a and 4-b present total recoverable reserves under lease by State and coal region. Estimates made by the Office of Technology Assessment (OTA) and published in December 1981 placed the Federal recoverable coal reserves under Federal lease for the Nation at about 16.5 billion tons in 565 tracts.

Two basic measures of coal resources are referred to in this report and are generally used in the discussions involving the Federal coal program. The first term is "in-place resources" which means the total estimated amount of coal that is contained on a particular tract. The in-place resource term includes all coal resources regardless of the recoverability of that coal.

The second and most useful term is "recoverable reserves". This is the estimated amount of coal that can be extracted from a coal tract given established mining techniques. Wherever possible recoverable reserves is used in this report. Which term is being used should be noted as the difference can be quite significant. The recovery rate can be as high as 90 to 95 percent of the in-place resources on some surface mineable tracts. However, 30 to 40 percent is a common recovery rate in tracts mineable through underground methods. The OTA figure represents an average recovery rate of 36 percent for the 565 leases it studied.

Appendix B, Tables 4-c and 4-d give the acres under lease by State and coal region as of April 24, 1983. The States of Utah, Wyoming, and Colorado contain approximately 76 percent of the leased Federal acres and in-place resources.

For recent regional leasing activity, see Section VI.

IV. COMPONENTS OF THE REGIONAL LEASING PROCESS

In April 1979, the Department of the Interior released the final programmatic EIS for the Federal Coal Management Program. The programmatic EIS assessed the national impacts of the coal program and related Federal coal policies. That statement covered all major national aspects of the preferred program and alternatives and assessed the effects of the alternatives in twelve specific coal regions. The programmatic EIS also examined the question of the need for Federal coal leasing to meet the Nation's future energy needs. Through the regional leasing process, the Federal Coal Management Program is primarily directed toward issuing new leases.

Land-Use Planning

The land-use planning process identifies areas acceptable for further consideration for coal leasing. These areas are identified after placing all lands in a planning area through four screens that are integral to the planning process.

1. Areas are eliminated from coal development consideration if they do not have coal potential.
2. Additional coal areas are eliminated if they are judged unsuitable, using the 20 unsuitability criteria.
3. Additional coal areas may be eliminated on multiple-use grounds if other resource values are determined to be superior to coal.
4. Surface owner consultation may also result in the elimination of lands from further consideration for leasing.

Activity Planning

Activity planning for coal in the planning area follows completion of the land use plan. Under the program, coal resource activity planning is conducted by the Bureau of Land Management and involves the delineation, ranking, selection, and scheduling of tracts for lease sale from the land identified in the land-use plan as areas acceptable for further consideration for leasing. Participation of State and local governments is actively sought during this phase. Before making a final decision, the Secretary consults with the Governors of the affected states.

Regional Leasing Levels

Regional leasing levels are established by the Secretary, who relies on the advice of affected State Governors in ensuring that leasing levels have properly considered social, environmental and economic impacts and constraints.

Lease Sale Procedures

Federal coal leases are sold by sealed bid. The bidder submitting the highest cash bonus bid for each tract is awarded the lease upon determination that the high bid constitutes fair market value for the lease and that the bidder is qualified to hold a Federal coal lease. Sale notices containing the minimum entry level bid for each tract are issued before each sale, and no bid below the minimum stated for each tract is considered further.

Prior to August 30, 1982, an oral auction followed the opening of sealed bids in most regional coal lease sales. Bidders submitting qualifying sealed bids were allowed to participate in the oral auction. The revised coal management regulations that became effective on August 30, 1982, eliminated the oral auction from the lease sale procedures. Bidders must now submit their best estimate of a tract's value in a sealed bid; they will not have an opportunity to raise their bids in an oral auction if they are outbid by a competitor.

Preference Right Lease Applications

A preference right lease application (PRLA) stems from a prospecting permit issued under section 2(b) of the Mineral Lands Leasing Act of 1920 (MLLA). Issuance of coal prospecting permits was discontinued by Secretarial Order #2952 of February 13, 1973. Congress repealed section 2(b) of MLLA upon passage of the Federal Coal Leasing Amendments Act of 1976. At the time of repeal, some 184 outstanding prospecting permits (now PRLAs) remained subject to adjudication by the Bureau.

A. BLM Processing Procedures and Schedules

In Natural Resources Defense Council, Inc., et al., vs. Berklund, 458 F. Supp. 925 (D.D.C. 1978), the court ruled that neither the Secretary's February 13, 1973, moratorium on the issuance of prospecting permits nor the Federal Coal Leasing Amendments Act of 1976 repealing section 2(b) of the Mineral Lands Leasing Act of 1920 restricted the rights of outstanding prospecting permit holders to obtain preference right leases. Since the PRLAs on file with the Bureau in 1978 were already 5 or more years old, the Secretary adopted a policy in the 1979 regulations that required the Bureau to process all outstanding PRLAs by December 1, 1984. This policy is contained in the regulations at 43 CFR 3430.3-1(a). State Directors establish schedules for processing individual PRLA's within the overall policy schedule.

The processing of PRLAs involves five basic steps:

1. The process begins with the applicant submitting an application for a preference right lease. The Bureau adjudicates the application to ensure that it has been filed prior to the

expiration date of the prospecting permit, properly signed, accompanied by the first year's rental fee ^{1/} and accompanied by data relative to the discovery of commercial quantities (initial showing).

2. The Bureau evaluates the applicant's initial showing data and either reaches a preliminary determination that the applicant has discovered commercial quantities or issues a decision rejecting the PRLA for lack thereof.
3. If the initial showing is certified, the PRLA is evaluated for land-use planning needs, and a processing schedule is developed. This step also requires the Bureau to prepare an environmental document and conduct, as necessary, public meetings and hearings. In the interest of efficiency, the Bureau may group PRLAs under a single environmental document or include them in a regional coal EIS. The land-use planning/environmental documentation step culminates in the preparation of recommended terms and conditions, bonding and diligence requirements.
4. The Bureau then requests the applicant to submit a final showing. This submission must contain vital financial and cost data to allow the Bureau to make a determination that the applicant has discovered commercial quantities of coal. Affirmative determinations establish that the applicant has a valid existing right to a coal lease. Final showings that do not show commercial quantities are rejected and no lease is issued.
5. As a final step, the Bureau issues coal leases where a valid right to such a lease is established.

B. Outstanding PRLAs

Records indicate that, of 184 applications on file as of September 30, 1977, 13 leases have been issued covering 23 PRLAs; 25 applications have been rejected or withdrawn by the applicants; and 136 remain in various stages of processing (see Appendix B, Table 5-a). The 13 leases issued (covering 23 PRLAs) encompass slightly over 58,200 acres and contain an estimated 361.4 million tons of recoverable coal (see Appendix B, Table 5-b). The PRLAs still being processed cover about 324,400 acres and contain an estimated 6 to 7 billion tons of recoverable coal (see Appendix B, Table 5-c). As of April 5, 1983, there was no coal production from any of the preference right leases.

^{1/} Required rental fee at the time of PRLA filing was \$.25/acre. Regulations now require a minimum of \$3.00/acre before a preference right lease is issued. The applicant must therefore remit an additional \$2.75/acre -- the difference between the two rental fees.

C. Relationship of PRLAs to Regional Sales

Expected production from the PRLAs is considered in the baseline in establishing the regional leasing level. Treatment of the PRLAs in the regional lease sale environmental statement depends on each individual regional situation.

Leasing By Application

In addition, emergency lease applications for areas within coal regions are considered in cases where Federal coal may be bypassed or where coal is needed to continue existing production or meet existing contracts. The application process can also be used in areas outside of the designated production regions where limited Federal coal ownership makes activity planning impractical. Land-use planning, NEPA compliance, and competitive lease sales are required in these situations.

Other Provisions

In addition, the Federal coal regulations contain provisions relating to exploration licenses; coal lease exchanges; lease transfers, modifications, and readjustments; royalties; mine plans; and diligent development requirements.

V. COAL PROGRAM REVIEW

The revised coal management regulations published in the Federal Register in July 1982 (43 CFR 3400 and 30 CFR 211) and clarified by revisions published in January 1983 accomplished three objectives:

- ° Elimination of excessive, burdensome, and counterproductive aspects of the coal program;
- ° Promotion of the "good neighbor policy" whereby the Department encourages State Government and public participation in decision-making insofar as is legally possible; And,
- ° Development of the publicly owned coal resources in a manner which is both environmentally sound and responsive to market demand.

Streamlining efforts began in February 1981 when interested State Governments and representatives of public interest groups, including energy companies, were asked by the Secretary to identify issues of concern. The analysis and study of the issues resulted in a number of changes to the Federal coal management regulations; a significant reduction in volume; expanded opportunities for State Government and public participation; earlier involvement of industry in the land-use planning process; and a stronger recognition of the importance of the publicly owned coal resources to economic health and national security.

The major changes from the July 1979 rules are presented below.

1979 RULES

1982/1983 RULES

A. Land-Use Planning

- | | |
|---|---|
| <ul style="list-style-type: none"> - No special call for coal resource information was issued during land-use planning. - Leasing consideration was confined to acres containing high or moderate coal development potential. | <ul style="list-style-type: none"> - BLM will issue a call for coal resource information during land-use planning to aid in early consideration of lands with coal potential. - The restriction on only considering lands with high or moderate development potential is removed allowing all areas with coal development potential to be considered. |
|---|---|

Purpose: More and better coal resource data earlier in the planning process and flexibility to meet the coal production needs of the region.

B. Leasing Levels

- Leasing targets were based on DOE's projections of national energy needs (demand for production, as well as other factors).
- The RCT recommended a single leasing target, usually a narrow range, to the Secretary.
- Leasing levels will be based on various factors that may include demand for reserves, expressions of interest, advice from affected Governors, national energy needs, etc.
- After receiving alternative leasing levels and a recommended leasing level from an RCT, the Secretary will set a leasing level in a broadly defined range.

Purpose: "Demand for reserves" represents a more market-oriented approach to approximating leasing levels than the "demand for production" approach with its fruitless attempts to closely match demand and supply.

C. Pre-Sale Consultation

- The Secretary consulted in writing with Governors in States where lease sales were proposed prior to making a coal lease sale decision.
- The Secretary consults in writing as before but also publishes in the Federal Register his reasons for accepting or rejecting their recommendations.

Purpose: Evidence of the Department's commitment to the good neighbor policy.

D. Unsuitability Criteria

- The rules established a series of 20 unsuitability criteria to be applied to lands being considered for leasing, to PRLAs, and to existing leases.
- Unsuitability criteria will no longer be applied to existing leases during land-use planning. The mandatory criteria will still be applied to these leases during mine plan review.

Purpose: Elimination of an unnecessary regulation, since the application on existing leases had nearly always been postponed until mine plan review.

E. Emergency Leasing

- Lease applicants had to meet certain criteria before being able to bid at emergency lease sales.
- The revised regulations eliminate the requirements that (a) a lease applicant have a mine in production 2 years before filing an application;

(b) a lessee be restricted to one emergency lease per operation; and
 (c) competition for leases sold under the emergency criteria be limited only to bidders meeting those criteria.

- State Governors were notified through the RCT of pending applications for coal lease sales.

- State Governors are doubly notified of pending lease-by-application actions — through the RCT and separately.

Purpose: Following the intent of Congress that all coal be leased competitively; more evidence of the good neighbor policy.

F. Surface Owner Consent

- Surface owners determined to be unqualified under section 714 of SMCRA used the regular appeal channel through Interior Board of Land Appeals (IBLA).

- Surface owner appeals now go to the BLM State Director and then to the Bureau Director. Surface owners cannot appeal to IBLA.

Purpose: To speed up the decision process.

G. Alluvial Valley Floor Exchanges

- Alluvial valley floor fee coal exchanges were discretionary.

- Alluvial valley floor fee coal exchanges are mandatory rather than discretionary.

Purpose: Stronger recognition of the rights of lessees and landowners in areas located in alluvial valley floors. The changes make the regulations consistent with the court's decision in Texaco and NCA v. Andrus.

H. Lease Sales

- Competitive lease sales could be held by sealed bid only or sealed bid followed by oral auction.

- All competitive lease sales must be held by sealed bid only.

Purpose: The new approach has more assurance of the public's receipt of market value for the coal resource.

I. Diligence

- All nonproducing coal leases issued before August 4, 1976 (the effective date of the Federal Coal Leasing Amendments Act) had to be producing coal in commercial quantities by June 1, 1986.
- Pre-FLCAA lessees will have 10 years from the date of the first lease readjustment after August 4, 1976, to be producing coal in commercial quantities.

Purpose: To address the concerns that the 1976 rulemaking was a unilateral adverse change in fundamental lease terms (development obligations) and had a poor legal basis to be enforceable prior to readjustment of those leases. The 1986 deadline set forth in the 1976 regulations as the time requiring production for all pre-FLCAA leases may have resulted in many leases failing to meet diligence simply because the market could not absorb that much production by 1986. The Department would be left in the situation of cancelling leases which could not meet diligence in 1986 and then face a shortfall in Federal lease development in the early 1990's. Now, all leases will not be due to produce by 1986, but will be spread out between 1986 and 2005.

VI. COMPETITIVE LEASE SALES SCHEDULED SINCE JANUARY 1981

Beginning in January 1981 a total of 12 competitive coal lease sales have been held in four of the six coal regions. As a result, 42 tracts covering 70,664 acres and containing 2.02 billion tons of recoverable reserves have been sold. Specific results for each region are described below. Also see Appendix B, Tables 1-a, 1-b, 1-c, 2-a, and 2-b.

Southern Appalachian Coal Region

The first round of activity planning for the Alabama subregion of the Southern Appalachian Coal Region began in July 1979. Tract delineation identified 27 tracts, of which 19 were offered and 13 were sold. This first round sale covered 10,000 acres containing 46 million tons of recoverable reserves. The total bonus bid was \$1,051,281. Three sales were held in conjunction with the first round offerings in the Southern Appalachian Region. In the first sale 6 tracts were offered and sold. Approximately 5,000 acres were leased containing 37.7 million tons of recoverable coal reserves. In the two follow-up sales 7 tracts were sold containing 5,100 acres and 8.4 million tons of coal.

The call for industry expressions of interest for Round II leasing in Alabama closed in July 1982. Tracts were delineated by the end of October 1982, and tract profiles were available in January 1983. The 16 tracts delineated were ranked on February 9, 1983, by the regional coal team. On February 14, 1983, the leasing level of 42 to 117 million tons of Federal coal was established by the Assistant Secretary for Land and Water Resources. The EIS team is currently working on a draft which is scheduled to be filed by the end of June 1983. The sale is scheduled for May 1984.

Fort Union Coal Region

The first round sale of coal in the Fort Union Region is scheduled for July 1983. The tract delineation team identified 24 tracts. The Fort Union leasing level is .8 to 1.2 billion tons of in-place reserves, approximately .72 to 1.08 billion tons of recoverable reserves. A final EIS was filed with EPA in February 1983. At the Regional Coal Team (RCT) meeting on February 23, 1983, the RCT voted to recommend a lease sale schedule of 5 new production tracts and 7 production maintenance/by-pass tracts for a total of 713.6 million tons of recoverable reserves to be offered for lease. A second sale will be suggested with either 3 or 4 new production tracts. This second sale would occur in April 1984 and include 454 to 465 million tons of recoverable reserves. A Secretarial decision is expected in May 1983.

Powder River Coal Region

The first round of leasing in the Powder River Region resulted in two sales held April 28, 1982, and October 15, 1982. In the April sale 11 tracts received bids. One tract, Rocky Butte, was determined to have received a bid below fair market value, so the bid was rejected. However, the Rocky Butte tract was sold at the October sale along with the Fortin Draw tract. These two sales culminated the effort started early in 1980 with calls for expressions of industry interest on three planning areas in northeast Wyoming and planning areas in south-central Montana.

The Powder River Region second round coal lease sale is set for August 1984. A leasing level for this second round sale was established by the Assistant Secretary for Land and Water Resources on April 29, 1983. The draft EIS is scheduled to be filed with EPA about November 28, 1983, and the final EIS about April 4, 1984. On May 1, 1984, consultation letters will be sent to the involved Governors, the Department of Justice and the affected Indian Tribes with the Secretary's final decision on leasing scheduled for early July 1984.

Green River - Hams Fork Coal Region

First round activity planning resulted in the first regional sale under the Federal coal management program. A total of 11 tracts were sold in 4 sales, beginning in January 1981. All tracts offered were sold with a total of 35.7 million dollars bid. One tract in Wyoming, Red Rim, was held over for further study of reclamation potential and wildlife habitat under Unsuitability Criteria Number 15. A final decision on leasing this Red Rim tract will be made after a decision on an unsuitability petition on Federal and private surface is made. This petition decision is expected by late September 1983.

The second round regional coal lease sale is scheduled for June 1984. Twenty-four tracts, totaling 986 million tons of recoverable reserves, are being analyzed for the leasing level of 750 million to 950 million tons (recoverable). The Draft EIS is scheduled to be available in early August 1983, with the Final EIS filed with EPA in February 1984. Consultation with the Governors of Wyoming and Colorado and the Attorney General are scheduled to begin in March 1984, with the Secretary's final coal leasing decision in mid-May.

Uinta-Southwestern Utah Coal Region

The first round of coal leasing for this region resulted in 3 sales: July 1981, February 1982 and May 1982. Eleven tracts were offered, all in central Utah; 7 were sold. Approximately 19.6 million dollars were bid for the 7 tracts which contain 89.5 million tons of recoverable reserves.

The second round coal lease sale is scheduled for February 1984. A leasing level of 1.6 billion to 2.1 billion tons of in-place coal was established for the region in March 1982. This is approximately .6 to 0.8 billion tons of recoverable coal reserves. Twenty-seven tracts (two in west central Colorado, five in southern Utah near Alton, and 20 in central Utah) are analyzed in the draft EIS, scheduled to be available in early May 1983. The maximum alternative considered in the EIS is .72 billion tons. The final EIS is expected to be filed with EPA in mid-October 1983. Consultations with the Governors of Utah and Colorado, the Attorney General and the Secretary of Agriculture (over one-third of the coal in the proposed tracts involves the Forest Service) are scheduled for late October, with the Secretary's final coal leasing decision by early January 1984.

San Juan River Coal Region

The first round coal lease sale for the San Juan River Region is scheduled for December 1983. The leasing level of 1.2 billion to 1.5 billion tons of in-place resources was established in January 1982.^{1/} This is approximately .66 to .83 billion tons of recoverable reserves. Thirty-nine tracts, totaling 1.1 billion tons of recoverable reserves, including eight by-pass tracts, are under consideration. All tracts are in the San Juan Basin of New Mexico. The draft EIS was filed with EPA on November 30, 1982; the final EIS is expected to be available in late July 1983. Consultation with the Governor, Indian Tribes and the Attorney General are scheduled for August 1983, with the Secretary's final decision on coal leasing expected in early November 1983.

^{1/} Based on an RCT recommendation, the Department is reconsidering the leasing level. The RCT recommended that the leasing level be reset at 800 - 900 million tons of in-place resources (44-50 million tons of recoverable reserves).

VII. PRODUCTION AND ROYALTY

Production and royalties collected from Federal coal leases are at a historic high. As of April 24, 1983, there were 627 Federal leases, containing 17.43 billion tons of recoverable coal reserves. Of these issued leases, 115 paid production royalties in FY 1983, producing over 104 million tons of coal in FY 1982. This production resulted in over \$61 million in production royalties (see Appendix B, Tables 3-a, 3-b, 3-c, and 3-d). In FY 1975 production was less than 44 million tons resulting in less than \$4.9 million in royalties. The increase from 1975 to 1982 is 135 percent in production and approximately 1,150 percent in royalties.

The compensation the Federal Government is receiving through royalty collections on a average per ton basis has also never been higher. In FY 1982 the Government collected almost 60 cents per ton from production from Federal coal leases, up from the 11 cents per ton collected in FY 1975.

In FY 1982, resource utilization, on tons produced per leased acre basis, was also at an all time high (see Appendix B, Table 6-a). This high ratio of resource utilization occurred in spite of the record high 84,151 acres leased in FY 1982. The concerns in 1970 of Government giveaways and long-term speculation, when utilization was less than 10 tons of production per leased acre, have persisted into 1983 even though utilization is over 112 tons of coal production for every acre under lease.

Production from Federal leases compared to total U.S. coal production has made marked increases in just the past few years (see Appendix B, Table 6-b). In Calendar Year 1981, Federal production was up almost 70 percent from 1980's Federal production, and represented 14 percent of the total U.S. coal production for Calendar Year 1981. In Calendar Year 1980, Federal production represented only 8 percent of total U.S. coal production.

The facts and figures from these tables indicate that leased Federal coal resources are not being misused; long-term speculating is not occurring. Utilization of the Federal resource and compensation paid the Federal government through royalties are at unprecedented levels. Although there are many positive indicators in the current resource utilization, this use is not a good indicator of the need for additional leasing. Section II, Subsection on "Market Demand", sheds some light on the misconceptions surrounding the need for future Federal coal leasing.

VIII. PROJECTIONS OF FUTURE LEASE SALES THROUGH FY 1985

A caveat necessary for a discussion of future sales deals with the anticipated sales estimates. The actual sales will depend on industry's response to the offerings. The actual tonnage sold could range from zero to the amount offered for leasing. The estimates provided here represent current BLM expectations. The actual results can be affected by changes in laws and regulations such as acid rain legislation or diligence, or by economic changes such as new railroads, rapid expansion of the economy, or drastic changes in the world oil market.

Anticipated Results

The projections for the FY 1983 and FY 1984 sales are presented in Appendix B, Tables 1-a and 7-a. The following is a brief discussion of those numbers. The discussion will primarily center on the leasing level, available resources and anticipated sales. The final decisions on how much coal resources to offer for sale has not been made in any of these regions. The availability of recoverable reserves for the next lease sale represents the coal in the delineated tracts that has not been discarded for environmental or other reasons during the lease sale activity to this point in time.

For the Fort Union lease sale, a leasing level of 0.72 to 1.08 billion tons of recoverable reserves was established. Approximately 1.9 billion tons of recoverable coal reserves have been delineated and are available for leasing. It is anticipated that about 0.6 billion tons of recoverable reserves will actually be leased. Sluggish growth in electricity demand and the impact on low oil prices on the synfuels industry will lower the demand for new reserves. These factors will have some effect on the anticipated sales in each of the regions, particularly in the low BTU Fort Union Region. Both of these factors, however, are subject to further changes.

In the San Juan River Region, the leasing level is 0.66 to 0.83 billion tons of recoverable coal reserves (which is expected to be reset at 0.44 to 0.50 billion tons) with 1.1 billion tons of recoverable reserves available. The Department anticipates selling about 0.35 billion tons. The sale figure will depend a great deal on industry's expectations of a future rail line into the San Juan Basin.

In the Uinta-Southwestern Utah Region the leasing level is 0.6 to 0.8 billion tons of recoverable reserves, with .72 billion tons of recoverable reserves available. The Department expects to sell approximately 0.8 billion tons of the available reserves. The demand for the high BTU, low sulfur coal in this region is still fairly high.

The Southern Appalachian regional leasing level is .042 - .117 billion tons of recoverable coal reserves. The Federal share of the coal reserves in that region is only a small fraction of the total coal reserves. About .12 billion tons is available for leasing. It is expected that about 0.10 billion tons will sell. This will depend a great deal on the effects the economy and coal exports are having on the private coal reserves in the region.

The Green River-Hams Fork regional leasing level is 0.75 - 0.95 billion tons of recoverable reserves, with 1.0 billion tons of recoverable reserves available. The Department currently expects to sell 0.6 billion tons. This is the second round sale for this region and new reserves will have to compete with already leased tracts.

The Powder River round II leasing level is 1.2 - 4.85 billion tons of recoverable reserves, with 7.3 billion tons recoverable reserves available. Currently, the Department expects to sell 1.8 billion tons but the uncertainties in Powder River are high due to its large market area and immense resources. These uncertainties are reflected in the large leasing level range adopted on April 29, 1983.

Appendix B, Table 7-a gives the anticipated bonus bids for each of these sales. The anticipated bonuses are based on the above sales estimates and the estimates for average high bonus bids derived from recent regional lease sales. If these expectations hold true, over \$280 million will be collected from these 6 sales. As with the actual amount sold, the bonus bids are greatly influenced by market conditions and expectations at the time of the sale.

Currently, there are approximately 17.4 billion tons of recoverable Federal coal reserves under lease. By 1995, of these 17.4 billion tons of leased reserves, 8.0 billion tons will be committed to production, 5.0 to 6.0 billion tons have little or no development potential and will eventually be returned to the Federal Government because of diligent development requirements (see next section on development prospects of existing Federal leases), and 2.4 to 3.4 billion tons will be available to compete for future contracts. Also by 1995, of the estimated 9.0 billion tons contained in PRLAs, 1.5 billion tons will be in production. The remaining 7.5 billion tons have little or no development potential and will be returned to the Federal Government because of diligent development requirements or will not make it through to lease issuance. These remaining tonnages, plus the anticipated 4.05 billion tons to be sold in FYs 1983 and 1984, will put 16 to 17 billion tons of Federal coal under lease (either in production or available for production). This is .5 to 1.5 billion tons less than what is under lease today.

Development Prospects of Existing Federal Leases

The following discussion is a brief overview of the development potential of existing Federal leases. An Office of Technology Assessment (OTA) report published in December of 1981 and individual studies conducted by the Department in each of the regions are the major sources of information for this evaluation. In conjunction with the establishment of the regional leasing levels (targets), the Department reviewed the productive capacity of private and leased Federal coal (including PRLAs) for each of the coal regions where a lease sale is scheduled.

The OTA review concentrates on the five active leasing regions in the West. The remaining leases are generally scattered with most of these in Oklahoma and Alabama. Appendix B, Table 8-a summarizes the development potential of the 488 leases in existence in 1980 in the five western regions. The information for this table was extrapolated from the OTA report.

In the active leasing regions about two-thirds of the pre-1981 leases are producing or have a good production potential by 1995. These leases contain almost three-fourths of the recoverable reserves (10.3 to 11.5 billion tons) in those regions with a projected 1991 capacity of 411.0 to 444.7 million tons per year. The Bureau's forecast of capacity from the new leases issued since 1980 in those regions is about 60 million tons per year.

Appendix B, Table 8-b summarizes the evaluation of the regional productive capacity conducted by the Department. The Alabama subregion (Southern Appalachian Region) is omitted due to the small quantity of Federal coal in the region. The productive capacity and corresponding production estimates are for the year 1995. The following is a region-specific discussion based on this survey and the OTA report.

Fort Union Region

The range of both the Department's capacity and production estimates found in Appendix B, Table 8-b reflects the uncertainty about synfuels. The nature of lignite (relatively low BTU content) precludes transporting it any significant distance. Thus there are significant coal resources that depend upon synfuel development. Mine mouth electricity generation will not make up the difference if synfuels do not develop by 1995. If synfuels are slow to develop, diligence may be a problem for a few existing leases and/or for additional leases.

Based on OTA estimates, approximately half the leased Federal coal resources, in 1980, have an uncertain or unlikely development future. Of the ten non-producing Federal leases in the region, OTA has categorized nine of them as having either uncertain or unfavorable development potential. The Department expects less than 200 million tons of the existing 550 million tons of recoverable reserves under lease to be in production by 1995. This is somewhat more pessimistic than the OTA estimates, reflecting

changing expectations since 1980. Of the 4 PRLAs in the region, none are expected to be in production by 1995.

Since completion of the OTA study, no new leases have been issued in the Fort Union Region. As Table 7-a in Appendix B indicates, the Department's expectation for the upcoming regional sale in Fort Union is to sell only 600 million tons of recoverable reserves. The low expectations for production and future leasing in the region reflect the general nature of Fort Union coal more than specific problems facing individual leases. Besides the low BTU value, high moisture content, and large concentrations of impurities, Federal coal in Fort Union rarely occurs in contiguous units. Many of the leases face reclamation problems, and with mine-mouth consumption of the lignite coal being the most economical, air quality standards will become harder to meet. Most future growth in demand for Fort Union coal will follow the fortunes of the synfuels industry. Given today's conditions the future is not particularly bright for this industry.

The Department estimates Federal mine capacity by 1995 is about 32 million tons per year. The Department's estimate for total capacity is 40 million tons per year by 1995. The production forecast is 30 to 50 million tons per year by 1995. The Federal share of the total resources in the region is estimated to be 36 percent. Based on analysis completed by the Department, the demand for additional Federal reserves is 300 to 600 million tons of recoverable resources.

Powder River Region

The Powder River region presents problems just because of the volume of coal involved and its low cost to produce. Its desirability as steam coal makes this the critical region as a source for that market. The production in the Powder River region is very much affected by national economic trends as well as regional trends. The recent recession has reduced the pressure for increasing the supply of coal in the region. Some of the forecasts showing immense increases in production in Powder River assumed large increases in the demand for electricity, synfuels, and exports simultaneously. While rapid economic growth will spur demand for energy in all sectors, economic growth depends a great deal on oil prices. If oil prices are low, then economic growth will be rapid, but the demand for synfuels will slacken while demand for electricity will increase. Low oil prices also mean lower transportation costs. As demand for Powder River coal depends very much of transportation costs, low oil prices will increase the demand for the region's steam coal. Thus, low oil prices will increase the demand for Powder River steam coal, but lower the demand for coal as a synfuel feedstock.

The OTA estimate (Appendix B, Table 8-a) is for most of the Federal leases to have a favorable development potential in the Powder River Region. Approximately 11 leases did not receive a favorable assessment. However these contain a relatively low amount of Federal coal (700 million tons of recoverable reserves). The major problem identified with these leases is their location on alluvial valley floors. Since the OTA report

was completed, 11 new leases have been issued. These new leases contain approximately 1.3 billion tons of recoverable coal reserves. The Department has determined that all these new leases have favorable development potential for 1995. However, the Department expects that 1.0 to 1.5 billion tons of leased reserves and as much as 5.0 billion tons of PRLA reserves have little or no development potential by 1995. The major change from the OTA estimate reflects changed expectations for the syn-fuels industry. The Department has also estimated that, by 1995, the total capacity for the region will be 343 million tons per year. The anticipated results for the upcoming Powder River sale are for approximately 1.8 billion tons of recoverable reserves to be leased (see Appendix B, Table 7-a).

This additional tonnage will increase the productive capacity of the region by another 50 to 70 million tons per year. As with the leases issued since 1980, these additional leases should have favorable production potential.

Appendix B, Table 8-b also includes production forecasts for the region. The production forecast for the Powder River Region is estimated at 215 million tons per year. The forecasts are based on analysis done by the Department, with the National Coal Model as the primary source of information. Market analysis done in conjunction with the leasing level process indicates a need to lease an additional 1.0 to 3.9 billion tons of recoverable reserves. The anticipated lease sales for the regions are for 0.8 billion tons of recoverable reserves.

Green River-Hams Fork Region

The uncertainty in the capacity forecast for this region demonstrates the marginal nature of some of the existing leases in this region. Due to transportation problems, environmental conflicts, or high mining costs these leases may not develop. In the OTA report, 101 Federal leases containing 2.0 billion tons of recoverable reserves were analyzed. Since 1980, 17 new leases have been issued in the region, containing approximately .6 billion tons of recoverable reserves. Approximately half of the tonnage leased since the OTA report was completed were from PRLAs.

The OTA study (Appendix B, Table 8-a) included 28 leases in the uncertain and unlikely category containing .84 billion tons of recoverable reserves. With the addition of the 17 new Federal leases, the figure in the uncertain and unlikely category may be as high as 1.0 billion tons. The major problem facing these unfavorable leases is that they are relatively small, isolated tracts with limited resources. Approximately half the PRLAs are not expected to be issued or, if they are issued, are not likely to come into production by 1995.

The Department has estimated the total productive capacity for the region as 54 million tons per year by 1995 (Appendix B, Table 8-b). The production forecast is estimated to be 50 to 70 million tons per year. The Department's market analysis indicates a need to lease an additional .2 to 1.1 billion tons of coal in the region. The anticipated tonnage that will sell in the Green River-Hams Fork Round II sale is .6 billion tons of recoverable reserves.

Uinta-Southwestern Utah Region

The region contains two distinct types of coal. The Uinta resource is very high BTU, low sulfur coal that in general is in high demand. The southwestern Utah resource is much lower BTU and has many transportation problems not encountered with the Uinta coal. Of the 117 Federal leases (Appendix B, Table 8-a) categorized as having uncertain or unlikely development potential, 96 are located in the southwestern Utah portion of the region. Almost 1.8 billion tons of recoverable reserves are contained in those 96 Federal leases that are not expected to be developed.

High mining costs, lack of transportation facilities, and potential impacts on nearby national parks, monuments, and other scenic and archaeological resources are major obstacles which greatly reduce the likelihood or desirability of many of these leases' being developed. Over 534.5 million tons of recoverable reserves in 61 leases are located on the rugged and isolated Kaiparowits Plateau. Production from these leases is uncertain due to the lack of rail service and established communities, high cost of underground mining, and potential environmental conflicts from development.

Since 1980, an additional 170 million tons of Federal coal has come under lease. Most of these leases are expected to have very favorable development potential. Of the 4.5 billion tons of Federal coal under lease in the region, over 3.1 billion tons are not expected to be in production by 1995. Of the estimated 1.0 billion tons of reserves held in pending PRLAs, none are expected to be producing by 1995.

For 1995, the total productive capacity is estimated at 49 million tons per year and the production forecast is 42 to 60 million tons per year. This high level of uncertainty is reflected in the demand for coal reserves estimate, which ranges from zero to 2.2 billion tons of recoverable reserves. The anticipated sale results (Appendix B, Table 7-a) are for 0.6 billion tons to be sold, all in the Uinta portion of the region.

San Juan River Region

This region also faces transportation problems, but not as severe as in Uinta-Southwestern Utah. No rail service exists into the San Juan Basin where much of this region's best coal is available. Rail access to the basin would expand and market base for basin coal to the large Texas market and other parts of the southwest. The estimated capacity and production both reflect this uncertainty. The demand for additional leasing mostly depends on the likelihood of rail lines into the basin. There are plans to offer this rail service, however, nothing is being developed at this point.

The OTA report identified six leases containing 40 million tons of coal as uncertain or unlikely for development. Since 1980, two new leases have been issued containing 1.2 million tons of recoverable reserves. The major unknown in the region is the 1.75 billion tons of recoverable reserves contained in the pending PRLAs. Most of the PRLAs are considered to have favorable development potential. However, the development of these PRLAs also depends on the availability of a railroad into the basin.

The Department's total productive capacity and production forecast for the region is based on the assumption that railroad service will eventually be available to the basin. The total capacity for 1995 is 71 million tons per year. The corresponding production forecast is for 40 to 60 million tons per year. If the railroad is not built, the coal demand forecasted for this region will shift to other regions. This shift will, however, entail higher costs which will be passed on to the consumer.

Based on the market analysis done in conjunction with the leasing level process, the demand for coal reserves in the San Juan Region is from 0.3 to 1.5 billion tons of recoverable reserves. The anticipated results from the December 1983 sale is for approximately .35 billion tons of Federal coal to be leased.

Regional Summary

As can be seen by this region-specific summary, each region is unique with its own problems. Fort Union coal reserves are generally constrained to on-site uses. The two major uses are on-site electrical generation and synfuels; both of which are not expected to grow rapidly in the near future. Powder River coal leases are the most inexpensive to produce, but that advantage can be adversely impacted by rising transportation costs. If transportation costs stay down, it can be expected that Powder River coal will eventually capture a much higher portion of the Nation's steam coal market. Green River-Hams Fork leases have a number of independent problems, including transportation, environmental conflicts, high mining costs, and tracts with limited coal resources. This is unlike the Fort Union and Powder River leases which have problems that effect essentially all coal in that region. The Uinta coal leases contain high BTU, low sulfur,

coal that is in relatively high demand. Southwestern Utah coal leases are not a factor in the coal market due to numerous problems. Most all Uinta-Southwestern Utah coal leases have fairly high mining costs associated with them. The major problem facing the San Juan leases is the lack of adequate transportation. The potential in the San Juan Basin is very great if a railroad is built.

Demand for Additional Coal Reserves

By simply subtracting the production forecasts from the regional capacities presented in Appendix B, Table 8-b, the question of the need to lease additional coal reserves may be raised. The simple mathematics does not result in the demand estimates presented in the third column (the leasing levels in Appendix B, Table 1-a) nor the anticipated sales figures in Appendix B, Table 7-a. The reasons are many and are presented throughout this report.

Paramount among the factors that create the differences between apparent need and projected demand is the Department's desire to allow the market place to address industry's demand for Federal coal reserves and not the Government's projections of production goals (see Section II, "Federal Coal Leasing"). In the same section is a full discussion of the pitfalls of long-range projections of the national and regional coal production needs. Any inaccuracies in those projections that lead to underleasing have very high costs to the consumer. The Department also recognizes that a demand for the coal industry exists to hold an inventory of coal reserves in a non-producing status. Each company faces a multitude of unknown resource needs. By having uncommitted coal resources on hand, each company has greater flexibility in dealing with these unknowns.

The Department, along with the General Accounting Office, the Council on Wage and Price Stability, the Department of Energy, and the Department of Justice, have recognized the need to provide sufficient supplies of coal to ensure competition within the industry. Leasing levels that exceed the minimal level required to meet the production needs allows for greater competition for utility coal contracts and increases the opportunities for new entries into the industry.

The Department wants to give industry the opportunity to supplant less economically and environmentally desirable coal leases that are currently under lease with new more desirable coal leases. Many of these older leases were issued before the current environmental laws were enacted. New leases that would be replacing these older leases have gone through multiple environmental screens and reviews.

Any new coal leases that replace unadjusted old leases will also net a significant amount of additional revenues. Besides the bonus bid that would be collected, the royalty and rental rates are significantly higher

on the new coal leases. As discussed in Section VII ("Production and Royalty"), the royalties collected in recent years have skyrocketed due to this change.

The idea behind the projected demands in Table 8-b, Appendix B, and the leasing levels in Appendix B, Table 1-a are to help guide the Department in how much coal should be offered for lease. A major key to the Federal Coal Program is to provide industry with the opportunity to lease coal. What is offered for lease is probably less than the maximum leasing level; the quantity of coal leased is probably less than what is offered; and the number of leases that go into production is probably less than what is leased. At each step, the market is not adversely constrained by previous Department decisions.

IX. PROPOSED LEASING MORATORIUM

Recently, there have been suggestions to instate a moratorium on Federal coal leasing. Under one proposal, the Department would be prohibited from issuing coal leases within a one-year timeframe. Not only would this prevent the issuance of leases resulting from regional coal lease sales, but also it would prohibit emergency lease sales, leasing of preference right lease applications, and coal lease exchanges.

A prohibition against the issuance of emergency leases could result in bypassing Federal coal that adjoins existing coal mines or the closure of existing mines that run out of reserves and are prevented from leasing adjacent Federal reserves. This would be an economic waste of a valuable resource that may never be mined thereafter, as bypassed coal usually is of little value because it is no longer of logical mining size. Additionally, a prohibition against the issuance of exchange coal leases will delay congressionally-authorized or mandated (Public Laws 95-554, 96-401, 96-475) coal lease exchanges.

Prohibiting the issuance of leases under the regional coal leasing program will have major detrimental impacts:

- Severe doubts about the future availability of Federal coal will undermine the investment structure of coal, energy transportation, steel, and related basic manufacturing industries. More importantly, a leasing moratorium will result in a loss of public and industry confidence in the ability of the Federal Government to meet the needs of the coal consumers. A leasing moratorium imposed by the Department in 1971 set off a series of events that effectively prevented Federal coal leasing for 10 years. There is no way of knowing what "ripple" effects a 1-year moratorium would have beyond the 1 year, but it clearly would be extensive and cannot be assessed merely by focusing on the events now scheduled for that 1 year.
- Revenues to States and the Federal Government will decline. This too will not be limited to just the 1 year, as even with a resumption of a coal program, it will take some time for confidence to be restored to assure active participation. The Department anticipates high bids totaling more than \$280 million from regional coal leasing between now and the end of Fiscal Year 1984. A delay in these sales will result in at least a corresponding delay in receipt of this money, of which 50 percent is returned to the State in which the leases are issued, 40 percent goes into the Federal Reclamation Fund, and 10 percent is returned to the Treasury.
- Companies seeking to enter the western coal market would be forced to purchase existing leases on the assignment market rather than acquire new leases. The windfall profits from such lease assignments would go to the current lessees rather than to the Federal

Government. This was a major criticism in the House Appropriations Committee report on the Federal coal program. Similarly, windfall profits would accrue even to high sulfur eastern coal with the decreased availability of western coal. Companies would accelerate development of the existing leases because of uncertainty over new leasing.

- * Many existing leases were issued with little or no environmental review or requirements and with low royalty rates. Accelerated development of these leases could lead to adverse environmental impacts and would reduce royalty revenues compared with those of new Federal leases. Once money was committed to development of these leases, development could not be redirected to new leases if and when regional Federal coal leasing is resumed, and thus both environmental and royalty consequences would extend far beyond 1 year.

A moratorium will achieve results that are opposite to those intended. It will foster the notion of deteriorating support for the basic industries of this Nation while increasing consumer prices, increasing windfall profits to the selected few, and increasing environmental degradation due to accelerated development of current leases with inadequate environmental analysis and higher sulfur content.

All the world will see the United States once again in confusion over its energy program. A moratorium that is clearly both anti-environmental as well as anti-consumer has no positive features. It offers only delay, more study, and substantial reversals of bipartisan progress of the past several years on consumer, environmental, and energy fronts. These consequences are far beyond the near term concerns regarding some of the mechanical features of the leasing process and do not reflect the many improvements to that process that have occurred during the past year. The Federal Government's ability or inability to be a stable participant in the coal market is a key factor in determining the extent to which coal will supplant other energy sources, specifically high priced imported oil.

X. CONCLUSION

The current Federal Coal Management Program has evolved over the course of a decade and responds to direction from the three branches of the Federal Government. With this program, coal -- after 10 years of virtually no leasing -- is now being leased to meet the market demand for coal reserves in a way that by design, includes:

1. Sound economics;
2. Environmental protection;
3. Coordination, consultation, and cooperation with State Governments;
4. Public participation;
5. National security factors;
6. National economic and employment considerations; and
7. Consumer protection measures.

This type of program is necessary to manage the Nation's coal resources because of the Federal Government's monopoly in the west -- where there is a growing dependence on Federal coal to meet future energy needs. The accelerated leasing program undertaken in 1981 allows environmentally preferable coal leases to compete with older leases that pre-date environmental laws -- a necessity if the Western States are to maintain their environmental standards.

Fostering competition as well as reducing speculation and windfall profits also results from the leasing program. This is particularly significant in order to avoid the situation that the Department faced in the early 1970's -- a considerable amount of tonnage under lease with only limited production to benefit the consumer and the Nation. Under the current leasing strategy, industry and utility companies can shop around for competitively priced coal and ultimately reduce the end price to consumers.

By developing our domestic coal resources, jobs are provided in businesses that are both directly and indirectly associated with coal mining. It also reduces the Nation's dependence on imported oil and helps American businesses compete in world markets.

Building on criticism from several sources, the Department moved away from the previous production goal approach that tried to match leased reserves to production. In its place, a leasing level process is used that recognizes that there is a demand for reserves beyond that which is required merely to meet production projections. Accordingly, enough environmentally and economically viable tracts are offered to meet the demand for reserves, allowing the market to decide which tracts are ultimately developed.

Not all the potential coal in a region is offered for lease. Through a tiered process (land-use planning, activity planning, lease sale, and mine plan stages), areas are eliminated until the most environmentally, socially, and economically acceptable tracts are put up for sale. Of those tracts offered, the bonus bidding procedure is the best method for deciding who actually gets the tracts offered for sale.

In keeping with the market orientation, price is believed to be the best indication of demand. Although some have concluded that the price of coal is declining, in actual fact, the price (as reflected in the bonus bids received) as a percentage of selling price of mined coal in a region has remained relatively constant (0.5 - 0.7 percent).

While the Federal Government receives compensation in the form of bonus bids for coal tracts, the most efficient means of generating revenues for the Treasury comes in the form of royalty payment on the value of coal actually produced. Over the past several years, there has been a noticeable increase in coal production from Federal leases (e.g., Federal coal production was up 70 percent from CY 1980 to CY 1981.) Thus, the amount of royalties payable to the government have significantly increased and, because of the 50-50 sharing rule, the States as well as the Federal Treasury benefit.

Another key reason for continued leasing relates to the diligence standards and environmental acceptability of the older coal leases (i.e., those that pre-date recent environmental laws). The newer leases are generally more economically efficient to develop and have passed through a series of screens to ensure their environmental quality. New leasing makes both good economic sense and good environmental sense.

Additionally, new and old leases face diligent development requirements. Many of these leases could revert to the government for failure to meet diligence, thus, leaving a gap that can only be filled through continued leasing.

These are strong and convincing reasons for the continuation of leasing Federal coal. It is the Department's policy to lease to meet the market demand for coal reserves so that coal is available for development when it is needed most. Leasing through the Federal Coal Management Program assures the Nation that the United States will not be caught short in the event of another oil supply crisis similar to the 1973-74 oil embargo. In essence, Federal coal is the Nation's insurance policy for meeting future energy demands.

APPENDIX A

Comments from Other Agencies and Departments
Concerning Federal Coal Leasing Levels

1. Department of Justice, in a January 23, 1981, letter to Wyoming State Director, BLM, concerning the Powder River I leasing target:

" . . . The present approach of attempting to match leasing to future coal demand on a regional basis produces leasing levels that are dangerously low [and] poses a serious risk of insufficient leasing which, especially in the Powder River region, would have serious competitive and economic efficiency consequences for the Nation with the inevitable result of increased coal prices."

2. Department of Energy letter to Wyoming State Director, BLM, on January 17, 1981, concerning the Powder River I leasing target:

"We are very concerned with the way these production goals are used in establishing a leasing target for the 1982 Powder River region sale. Since we believe that the cost of underleasing Federal coal is substantially greater than the cost of overleasing, we strongly suggest moving toward the high production goal for the Powder River region . . ."

3. Council on Wage and Price Stability letter of January 26, 1981, to the Wyoming State Director, BLM:

" . . . DOI's methodology . . . severely limits - without adequate justification - the quantity of Federal coal that can be offered in a given sale. [COWP's staff report] recommends that coal leasing targets be based on producer's demand for coal reserves rather than on forecasts of end-use demand."

4. The General Accounting Office, in its Report to the Congress of August 22, 1980 (A Shortfall in leasing coal from Federal Lands: What Effect on National Energy Goals?), criticized the leasing target for the January 1981 lease sale in the Green River-Hams Fork Region of Colorado and Wyoming.

"Our analysis indicates that Interior's leasing target should be about three times greater than it is If Interior does not update its assumptions and improve its target setting process, the risk also is increased of not leasing sufficient coal to satisfy national energy needs." (Page 58 of GAO Report EMD 80-87.)

The above comments were highly critical of the leasing target methodology developed by the previous Administration. Explicitly and implicitly, the GAO, COWPS, DOJ and DOE support the current leasing level approach that attempts to satisfy the market demand for reserves.

APPENDIX B
TABLES

47

TABLE 1-a
FUTURE LEASE SALE IN FY 1983 AND FY 1984
(RECOVERABLE RESERVES)

Region	Sale Date	Leasing Level (Billion Tons)	Expression of 1/ Leasing Interest (Billion Tons)	Reserves Available 2/ for Leasing (Billion Tons)
Fort Union	July 1983	.72 - 1.08	2.0 - 2.5	1.9
San Juan River	December 1983	.66 - .83 3/	1.6 - 2.5	1.5
Uinta-SW Utah	February 1984	.6 - .8	3.8	.72
So. Appalachian	May 1984	.042 - .117	-	.12
Green River/ Hams Fork	June 1984	.75 - .95	0.9 - 1.5	1.0
Powder River	August 1984	1.2 - 4.85	2.5 - 5.9	7.3

1/ Tonnage figures should be viewed as rough estimates. Many expressions of interest received by the Department do not indicate exact tonnage the company is interested in leasing.

2/ Tonnage figures are estimates of the reserves that are available for leasing following tract delineation.

3/ The San Juan River Regional Leasing Level is currently under study for revisions downward to .44 to .5 billion tons of recoverable reserves.

SOURCE: U.S. Department of the Interior, Bureau of Land Management, Division of Solid Mineral Leasing.

TABLE 1-b
COAL ACTIVITY PLANNING COMPLETION DATES

COAL PRODUCTION REGION	EXPRESSION OF INTEREST	TRACT DELINEATION	SITE SPECIFIC ANALYSIS	LEASE LEVEL	RCT TRACT RANKING	DRAFT EIS	FINAL EIS	RCT LEASE RECOM.	SECRETARY DECISION DOCUMENT	SALE DATE
<u>FORT UNION</u>										
Round I	--	01/82	01/82	12/81	01/82	08/82	02/83	05/83		07/83
<u>GREEN RIVER</u>										
Round I	--	--	--	--	--	--	--	--		
Round II	05/82	09/82	12/82	01/83	01/83	07/83	02/84	05/84		10/81 & 04/82 06/84
<u>POWDER RIVER</u>										
Round I	--	--	--	--	--	--	--	--		
Round II	08/82	11/82	03/83	04/83	05/83	11/83	12/81 03/84	02/82 07/84		04/82 08/84
<u>SAN JUAN</u>										
Round I	--	03/82	04/82	03/82	04/82	11/82	07/83	11/83		12/83
<u>SOUTHERN APPALACHIAN</u>										
Round I	--	--	--	--	--	--	--	--		
Round II	08/82	10/82	01/83	03/83	02/83	05/83	10/83	11/83		12/81 & 09/82 05/84
<u>UINIA-SOUTHWESTERN UTAH</u>										
Round I	--	--	--	--	--	--	--	--		
Round II	02/82	04/82	07/82	03/82	07/82	05/83	10/83	10/83		02/82 & 05/82 01/84 02/84

NOTE: The dates after 9/82 are for planning purposes only.

SOURCE: U.S. Department of the Interior, Bureau of Land Management, Division of Solid Mineral Leasing.

TABLE 1-c
REGIONAL COAL LEASE SALE SCHEDULE

	1st Quarter			2nd Quarter			3rd Quarter			4th Quarter		
	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
FY 1982	GR #1c		APP #1b		UI #1b		PR #1 GR #1d	UI #1c				APP #1c
FY 1983	PR #1b									FU #1		
FY 1984			SJR #1		UI #2			APP #2	GR #2		PR #2	
FY 1985												FU #2
FY 1986		PR #3									SJR #2	
FY 1987												GR #3 UI #3

Federal Coal Regions

GR - Green River Hams Fork
UI - Uinta-Southwestern Utah
PR - Powder River
FU - Fort Union
APP - Southern Appalachian, Alabama Subregion
SJR - San Juan River

Lease Sale

1 or 1a - Initial first round
lease sale
1b, 1c - First round
follow-up sale
2 - Initial second round sale
3 - Initial third round sale

NOTE: The sale schedules during calendar years 1983 through 1987 are tentative and are for planning purposes only. No final decision is made to hold a regional lease sale or to schedule when such a sale is to be held, until completion of all planning and environmental assessment work for the regional proposal.

TABLE 2--a
TRACTS SOLD IN ALL REGIONAL SALES
(January 1981 Through October 1982)

REGIONS	DATE OF SALE	Number of Tracts	ACRES	TOTAL RECOVERABLE RESERVES (in Mil. Tons)	TOTAL HIGH BONUS BIDS	AVERAGE HIGH BONUS BID (CENTS/TON) DOLLARS/TON
Green River-Hans Fork	January 1981	6	11,283	87.9	\$1,730,277	.020
	April 1981	2	5,572	64.3	9,013,430	.140
	October 1981	1	5,974	62.7	1,792,227	.029
	April 1982	2	4,262	112.4	23,164,125	.206
	Total to Date	11	27,091	327.3	\$35,700,060	
Powder River	April 1982	10	16,554	1,089.6	\$43,484,434	.040
	October 1982	2	5,176	471.6	23,689,632	.050
	Total to Date	12	21,730	1,561.2	\$67,179,066	
Southern Appalachian	June 1981	6	5,040	37.8	\$180,537	.005
	December 1981	4	3,629	7.3	623,605	.023
	September 1982	3	1,520	1.1	247,114	.225
	Total to Date	13	10,189	46.2	\$1,051,256	
Uinta Southwestern Utah	July 1981	5	10,854	79.7	\$14,200,410	.178
	February 1982	1	160	2.3	158,400	.069
	May 1982	1	640	7.5	5,216,000	.695
	Total to Date	7	11,654	89.5	\$19,574,810	
Total All Regions	To Date	43	70,664	2,024.2	\$123,505,192	

SOURCE: U.S. Department of the Interior, Bureau of Land Management, Division of Solid Mineral Leasing Automated Coal Lease Data System, September 30, 1982.

TABLE 2-b
BONUS BIDS FROM ALL REGIONAL SALES
(JANUARY 1981 THROUGH OCTOBER 1982)

Regions	Total High Bonus Bid (Dollars)	Acreage	Recoverable Reserves (Million Tons)	Average BTU Per Pound	Average Price Per Ton of Coal (Dollars)
So. Appalachian	1,051,256	10,189	46.2	12,500	30.00
Green River - Hams Fork	35,700,059	27,091	327.3	10,250	20.00
Powder River	67,179,066	21,730	1,561.2	8,250	7.50
Uinta-SW Utah	19,574,810	11,654	89.5	12,300	28.00
Total	123,505,192	70,664	2,024.2		
All Regions					

SOURCE: U.S. Department of the Interior, Bureau of Land Management, Division of Solid Mineral Leasing, Automated Coal Leasing Data System, September 30, 1983, and Coal Week, McGraw-Hill, Inc., Washington, D.C., February 7, February 14, February 28 and March 7, 1983, Vol. 9 No. 7 through No. 10.

TABLE 2-C
ANALYSIS OF HIGH
BONUS BIDS FROM ALL REGIONAL SALES
(JANUARY 1961 THROUGH OCTOBER 1982)

Region	Total High Bonus Bid (Dollars)	Dollar/Acre	Cent/Ton	Average High Bonus Bid		Percent of Coal Price 2/
				Cent/Million BTU 1/	Cent/Million BTU 1/	
So.						
Appalachian	1,051,256	103	2.29	.092		.076
Green River- Hams Fork	35,700,059	1,318	10.9	.531		.545
Powder River	67,179,066	3,092	4.3	.261		.573
Utah-SW Utah	19,574,810	1,680	21.88	.888		.775
Total	123,505,192					
All Regions						

1/ Average BTU/lb. x 2,000 = BTU/ton divided by 1,000,000 = MM BTU/ton divided by cents/ton = cents/MM BTU.

2/ Cents/tons divided by average mine month selling price per ton of coal = percent of coal price.

SOURCE: U.S. Department of the Interior, Bureau of Land Management, Division of Solid Mineral Leasing, Automated Coal Leasing Data System, September 30, 1983, and Coal Week, McGraw-Hill, Inc., Washington, D.C., February 7, February 14, February 28 and March 7, 1983, Vol. 9 No. 7 through No. 10.

TABLE 3--a
PRODUCING FEDERAL COAL LEASES
BY STATE: FY 1982

State	Leases	Acreage	Coal Production (Tons)	Production (Value(\$))	Royalty (Value(\$))
TOTAL	111	204,252	104,429,888	\$1,546,321,713	\$61,062,456
Alabama	1	2,388	2,178	92,160	3,686
Colorado	29	28,282	9,157,131	210,369,532	13,170,861
Montana	13	23,455	25,194,856	313,433,868	8,782,544
New Mexico	4	10,031	4,847,393	92,731,433	7,841,138
North Dakota	4	4,721	1,190,079	9,984,697	745,253
Oklahoma	4	2,936	245,676	10,563,890	1,110,490
Utah	32	54,694	7,892,365	209,078,609	5,833,291
Washington	1	241	65,574	804,322	13,115
Wyoming	26	77,504	55,834,635	699,263,202	23,562,078

NOTE: The statistics for FY 1982 represent production and royalty reported during FY 1982 and adjustments made during FY 1982 for prior periods. The FY 1982 royalty management statistics may not represent actual production in FY 1982 or the royalty accrued on that production due to adjustments for previous years. This data is unpublished.

SOURCE: U.S. Department of the Interior, Minerals Management Service, Royalty Management Office.

TABLE 3-b
PRODUCING FEDERAL COAL LEASES
BY REGION: FY 1982

Region	Leases	Acres	Coal Production (Thousand Tons)
TOTAL	111	204,252	104,430
So. Appalachian	1	2,388	2
Fort Union	5	5,441	1,324
Green River-	27	53,758	15,090
Hams Fork			
Powder River	21	58,037	72,666
San Juan River	5	10,191	4,935
Western Interior	4	2,936	246
Uinta-SW Utah	47	71,259	10,099
Other	1	241	65

NOTE: Details may not add to total due to rounding. The statistics represent production and royalty reported during FY 1982 and adjustments made during FY 1982 for prior periods. The FY 1982 royalty management statistics may not represent actual production achieved in FY 1982 or the royalty accrued on that production due to adjustments for previous years. The data is unpublished.

SOURCE: U.S. Department of the Interior, Minerals Management Service, Royalty Management Office.

TABLE 3-c

FEDERAL COAL PRODUCTION, PRODUCTION VALUE, AND ROYALTY VALUE
FISCAL YEARS 1973-1982

Fiscal Year	Coal Production (Thousand Tons)	Production Value (Thousand Dollars)	Royalty Value (Thousand Dollars)
1973	24,247	93,307	\$4,044
1974	32,139	140,307	5,535
1975	43,590	224,947	8,335
1976	52,491	338,312	10,949
1977	50,197	430,230	9,718
1978	58,781	550,712	12,321
1979	59,141	699,234	16,119
1980	71,958	862,817	24,569
1981	94,645	1,198,764	40,280
1982	104,430	1,546,322	61,062

SOURCE: U.S. Department of the Interior, Geological Survey, Federal and Indian Lands Coal, Phosphate, Potash, Sodium, and other Mineral Production, Royalty Income, and Related Statistics, June 1981 for data for FY 1973-1975. Data for succeeding Fiscal Years is unpublished and is from Minerals Management Service, Royalty Management Office.

TABLE 3-d
ROYALTY REVENUES FROM FEDERAL COAL LEASES,
BY STATE: 1965 TO 1982

STATE	FY 1965	FY 1970	FY 1975	FY 1980	FY 1981	FY 1982
TOTAL	\$777,551	\$1,069,935	\$4,857,423	\$24,568,692	\$40,280,418	\$61,062,456
Alabama	NA	106	24,394	31,669	0	3,686
Alaska	52,244	41,146	51,438	0	0	0
Colorado	150,405	303,405	364,035	7,115,564	11,952,875	13,170,861
Kentucky	36,193	NA	126,643	10,830	0	0
Montana	16,826	11,027	1,219,863	2,065,885	3,922,771	8,782,544
New Mexico	62,304	1,347	242,716	1,472,900	3,440,772	7,841,138
North Dakota	36,567	135,997	60,013	272,272	101,677	745,253
Oklahoma	23,695	54,053	43,199	826,942	1,009,820	1,110,490
Utah	271,375	299,547	456,480	3,968,073	5,094,133	5,833,291
Washington	NA	NA	18,851	0	0	13,115
Wyoming	125,790	222,805	2,249,791	8,804,557	14,758,370	23,562,078

NA: Not Available

NOTE: Details may not add to total due to rounding. The statistics for FY 1982 represent production and royalty reported during FY 1982 and adjustments made during FY 1982 for prior periods. The FY 1982 royalty management statistics may not represent actual production achieved in FY 1982 or the royalty accrued on that production due to adjustment for previous years. This data is unpublished.

SOURCE: U.S. Department of the Interior, Minerals Management Service, Royalty Management Office.

TABLE 4-a

NUMBER OF LEASES, ESTIMATED RECOVERABLE RESERVES
BY STATE: APRIL 25, 1983

State	Number of Leases	Total Recoverable Reserves (million tons)
<u>TOTAL</u>	627	17,431
Alabama	15	35
Colorado	142	1,823
Kentucky	5	11
Montana	26	1,470
New Mexico	29	466
North Dakota	19	256
Oklahoma	48	213
Utah	216	3,699
Wyoming	120	9,444
Other <u>1/</u>	10	14

1/ Due to confidentiality requirements, an aggregate figure is given for all reserve data for States with less than three leases. Other includes Alaska, California, Oregon, Pennsylvania, Virginia, and Washington.

NOTE: Details may not add to total due to rounding.

SOURCE: U.S. Department of the Interior, Bureau of Land Management, Division of Solid Mineral Operations, Quarterly Mining Report, April 22, 1983, Division of Solid Mineral Leasing, and the Automated Coal Lease Data System, September 30, 1982.

TABLE 4-b

NUMBER OF LEASES, ESTIMATED RECOVERABLE RESERVES
BY REGION: APRIL 23, 1983

Region	Number of Leases	Total Recoverable Reserves (million tons)
<u>TOTAL</u>	627	17,431
So. Appalachian	15	35
Fort Union	22	546
Green River-Rams Fork	120	1,677
Powder River	91	9,898
San Juan River	28	467
Uinta-Southwestern Utah	281	4,545
Other <u>1/</u>	73	262

1/ Includes all leases not in a Federal coal production region and, due to confidentiality requirements, includes all reserve data for Federal coal production regions with less than three leases.

NOTE: Details may not add to total due to rounding.

SOURCE: U.S. Department of the Interior, Bureau of Land Management, Division of Solid Mineral Operations, Quarterly Mining Report, April 22, 1983, Division of Solid Mineral Leasing, and the Automated Coal Lease Data System, September 30, 1982.

TABLE 4-c
SURFACE ACREAGE OF LEASES,
BY STATE: APRIL 25, 1983

State	Number of Leases	Total Acres
<u>TOTAL</u>	627	948,486
Alabama	15	13,094
Alaska	1	2,560
California	1	80
Colorado	142	159,402
Kentucky	5	4,337
Montana	26	42,448
New Mexico	29	44,760
North Dakota	19	16,860
Oklahoma	48	80,937
Oregon	3	5,411
Pennsylvania	2	80
Utah	216	318,337
Virginia	1	251
Washington	2	521
Wyoming	120	259,408

SOURCE: U.S. Department of the Interior, Bureau of Land Management, Division of Solid Mineral Operations, Quarterly Mining Report, April 22, 1983, and the Automated Coal Lease Data System, September 30, 1982.

TABLE 4-d
SURFACE ACREAGE OF LEASES,
BY REGION APRIL 25, 1983

Region	Number of Leases	Total Acres
<u>TOTAL</u>	627	948,486
So. Appalachian	15	13,094
Fort Union	22	22,756
Green River-Hams Fork	120	181,709
Powder River	91	183,738
San Juan River	28	44,900
Uinta-Southwestern Utah	281	404,145
Other	73	98,143

SOURCE: U.S. Department of the Interior, Bureau of Land Management, Division of Solid Mineral Operations, Quarterly Mining Report, April 22, 1983, and the Automated Coal Lease Data System, September 30, 1982.

TABLE 5-a
ACREAGE OF PRLA'S
SEPTEMBER 30, 1977 AND APRIL 1, 1983

	Number of PRLA's April 1, 1983	Acreage	Number of PRLA's September 30, 1977	Acreage
Alaska	2	5,120	4	10,240
Colorado	17	32,670	37	82,911
Montana	4	14,673	4	14,673
New Mexico	26	75,509	28	75,509*
Oklahoma	-	-	4	5,954
Utah	15	50,909	25	75,592
Wyoming	<u>72</u>	<u>145,410</u>	<u>82</u>	<u>138,275</u>
Total	136	324,371	184	403,154

* Figure does not include the unknown acreage from 2 rejected PRLA's.

TABLE 5-b
LEASES ISSUED FROM PRLA'S
SEPTEMBER 30, 1977 to April 1, 1983

	Leases*	Acres
Alaska	1	2,560
Colorado	7	20,182
Oklahoma	1	5,707
Utah	3	24,682
Wyoming	<u>1</u>	<u>5,078</u>
Total	13	58,209

* Three PRLA's were combined into 1 lease in Oklahoma, 8 PRLA's were combined into 1 lease in Utah, and 2 PRLA's were combined into 1 lease in Wyoming.

TABLE 5-c
PRLA's ISSUED, WITHDRAWN OR REJECTED FROM SEPTEMBER 30, 1977 THROUGH APRIL 1, 1983

	Number of PRLA's April 1, 1983	Issued	Withdrawn or Rejected	Number of PRLA's September 30, 1977
Alaska	2	1	1 1/	4
Colorado	17	7	13	37
Montana	4	-	-	4
New Mexico	26	-	2	28
Oklahoma	-	3	1	4
Utah	15	10	-	25
Wyoming	72	2	8	82
Total	136	23	25	184

1/ Jurisdiction of the PRLA was conveyed to the State of Alaska.

TABLE 6-a
FEDERAL COAL PRODUCTION AND LEASE ACREAGE

<u>Fiscal Year</u>	<u>Coal Production</u> (Million Tons)	<u>Acres Under</u> <u>Lease</u>	<u>Tons Per</u> <u>Leased Acre</u>
1950	7.1	120,747	59.1
1955	5.7	135,740	41.9
1960	5.4	199,272	27.3
1965	6.2	373,997	16.5
1970	7.3	763,658	9.6
1973	24.2	-	-
1974	32.1	-	-
1975	43.6	779,650	55.9
1976	52.5	-	-
1977	50.2	-	-
1978	58.8	788,308	74.6
1979	59.1	799,401	73.9
1980	72.0	812,163	88.6
1981	94.6	842,949	112.2
1982	108.0	948,486	113.9

SOURCE: U.S. Department of the Interior, Bureau of Land Management, Division of Solid Mineral Operations, Quarterly Mining Report, and the Division of Solid Mineral Leasing, Federal Coal Management Reports FY 1977 through FY 1982.

TABLE 6-b
TOTAL UNITED STATES COAL PRODUCTION AND FEDERAL PRODUCTION IN MILLION TONS
BY STATE: CALENDAR YEAR 1979 THROUGH 1981

State	Production in CY 1979		Production in CY 1980		Production in CY 1981	
	U.S.	Federal	U.S.	Federal	U.S.	Federal
Total	781	60	830	69	824	117
Colorado	18	8	19	9	20	11
Montana	33	9	30	10	34	27
New Mexico	15	5	18	6	19	9
North Dakota	15	1	17	1	18	1
Utah	12	7	13	9	14	9
Wyoming	72	30	95	33	103	60
Other States ^{1/}	620	0	637	1	618	0

^{1/} Few or no Federal coal resources are located in the other States.

NOTE: Details may not add to total due to rounding.

SOURCE: Total U.S. Production - Department of Energy, Energy Information Administration.
Federal Production - Department of the Interior, Minerals Management Service,
Royalty Management Office.

TABLE 7-a
ANTICIPATED SALES AND BONUS BIDS

Region	Anticipated Sales of Recoverable Reserves (Billion Tons)	Ave. High Bonus Bid (Cent/Ton)	Total High Bonus Bid (Dollars)
Fort Union	.6	4.0	24,000,000
San Juan River	.35	7.0	24,500,000
Uinta-SW Utah	.6	10.0	60,000,000
So. Appalachian	.1	3.0	3,000,000
Green River - Mesa Fork	.6	8.0	48,000,000
Powder River	1.8	5.0	90,000,000
Total	4.05		249,500,000

NOTE: Anticipated sales, average high bonus bids and total high bonus bids are based on analysis of information available and only represent a rough estimate of anticipated receipts and sales. Anticipated average high bonus bid in cents per ton, and total high bonus bids are given in constant 1983 dollars for each region.

SOURCE: U.S. Department of the Interior, Bureau of Land Management, Division of Solid Mineral Leasing.

TABLE 8-a
PROJECTED FEDERAL LEASE AND MINE DEVELOPMENT POTENTIAL
OF LEASES ISSUED AS OF 1980
IN THE FIVE ACTIVE WESTERN COAL REGIONS

Region Name	Producing/Favorable		Uncertain/Unlikely		Expected 1991 1/ Capacity
	#	Billion Tons	#	Billion Tons	
Fort Union	14	.27	9	.28	32.4
Powder River	62	8.46	11	.73	236-247
Green River/ Hams Fork	72	1.19	28	.84	56.3-59.4
Uinta/SW Utah	142	2.13	123	1.92	61.3-80.9
San Juan	21	0.44	6	.04	25
Total	309	12.31	179	3.81	411-444.7

1/ Capacity of producing and favorable mines with Federal leases.

SOURCE: U.S. Department of the Interior, Bureau of Land Management, Division of Solid Mineral Leasing, April 22, 1983, and Congress of the United States, Office of Technology Assessment, An Assessment of Development and Production Potential of Federal Coal Leases, December 1981.

TABLE 8-b
TOTAL REGIONAL PRODUCTIVE CAPACITY, PRODUCTION
FORECAST AND RESERVE DEMAND ESTIMATES FOR 1995

Region Name	Estimated ^{1/} Capacity mmtons/yr	Estimated Production mmtons/yr	Demand for Coal Reserves billion tons
Fort Union	40	36 - 50	.3 - .6
Powder River	343	215	1.0 - 3.9
Green River/ Hams Fork	54	50 - 70	.2 - 1.1
Uinta	49	42 - 60	.0 - 2.2
San Juan	71	40 - 60	.3 - 1.5
Total	557	384 - 470	1.8 - 9.3

^{1/} BLM field office estimates assuming no demand constraint but current mine marketing cost constraints.

SOURCE: U.S. Department of the Interior, Bureau of Land Management, Division of Solid Mineral Leasing, April 22, 1983.



United States Department of the Interior

OFFICE OF THE SECRETARY
WASHINGTON, D.C. 20240

JUN 4 1979

Memorandum

To: The President

From: The Secretary of the Interior

Subject: Sixty Day Coal Report

On April 5, 1979, you asked that the Department of the Interior, along with the Department of Energy and the Environmental Protection Agency, report to you within sixty days on how coal production, development and use can be increased. This memorandum summarizes the steps I am taking to ensure that the Department of the Interior's responsibilities are carried out in a manner that efficiently and responsibly encourages long-term growth in the production and use of coal. (These initiatives are discussed further in The Sixty Day Coal Report transmitted to you by GIB.)

The DOI Role in Expanding Coal Production and Use

Before summarizing the Department's initiatives, several facts should be emphasized:

1. Coal production has increased in recent years; indeed, March 1979 was a record month for U.S. steam coal production.
2. In the past two years, production of Federal coal has risen over 65% to in excess of 60 million tons; during your first term, Federal coal production will double. Mine plan approval by this Department during the past two years will significantly increase Federal coal production capacity, adding an estimated 90 million tons to the nation's coal supply. These numbers demonstrate an important turnabout in the availability and use of this vital energy resource.
3. The coal industry is, by common consensus, capable of even greater production. Present national production capacity exceeds demand by 100-150 million tons per year.
4. Near-term increases in coal use are primarily constrained by demand factors, especially the prices of substitute fuels, rather than supply considerations.
5. The major policies and programs of the Department of the Interior, which include leasing of Federally-owned coal and regulation of the surface environmental impacts of all coal mining, affect the availability of coal and,

to some extent, the cost at which it can be mined, but have little effect on the demand for coal.

In light of the points noted above, it is unlikely that the initiatives proposed in this memorandum will have major near-term effects on the use of coal. However, the steps I have taken will ensure that, as an increased demand for coal materializes over the next decade, this Department's programs are carried out to encourage efficient and responsible growth in coal use. These initiatives will allow the Department to:

- o expedite decisions by DOI public lands management agencies affecting the siting of energy projects;
- o manage Federal coal reserves — including a new system for leasing Federal coal — to encourage the use of coal;
- o assure a stable and rational regulatory environment to provide greater certainty and, thus, encourage the development of coal; and
- o encourage the development of techniques to extract coal in the most efficient, productive and environmentally sound manner.

Opening Debate on Legislative Mandates

The Department of the Interior has discouraged efforts to reopen Congressional debates about the basic legislative mandates for coal leasing, Federal lands planning and management, and surface mining. Years of debate preceded the 1976-77 adoption of those guiding statutes. The statutes provide clear Congressional direction that Federal coal leasing and non-Federal coal production take place within planning and regulatory frameworks that assure necessary coal production while minimizing environmental and other social costs. The Department has developed integrated programs to implement the statutes and to carry out Presidential coal development and environmental protection directives. The implementation of these programs is just underway, and changes in the underlying statutes would be, in my view, premature.

Even if DOI coal-related planning and environmental standards were substantially relaxed, no significant increase in production or use of coal would result. There would be some reduction in costs and some changes in location of coal production and use, but conflict and resulting delays for individual development proposals would likely increase, State-Federal relations would return to pre-1977 conflicts, and public acceptance of increased coal use would diminish. Where programs of this Department affect the cost of mining coal — especially the new Federal coal management program and the Office of Surface Mining regulatory program — they will be monitored carefully to identify unwarranted or unintended effects that would inhibit coal production as demand increases.

Comments on the Sixty Day Coal Report

There are two major deficiencies of the Sixty Day Coal Report: first, there is only limited analysis of the nation's energy situation to place the present coal use situation into accurate perspective; and, second, analysis that would permit evaluation of the benefits and costs of the report's suggestions for increasing coal use is lacking.

The percentage of coal as an element of our Nation's in-the-ground energy reserves compared to the percentage of coal's contribution to total energy use is not, in itself, sufficient for analysis of the economic benefits of expanding the use of coal. In fact, the emphasis on that statistical perspective creates a false impression of an irrational disparity between reserves and use.

Coal is unquestionably the fuel of choice for generating electricity, and will continue to be. Data show that the percentage of electric power made with coal rather than oil/gas is increasing. While projections for additional electric power capacity are being reduced (because of general economic circumstances causing an overall reduction in plans for building new electric power plants), coal's share of the projected new capacity is increasing. The Administration can point to success in assuring that coal is used to wean our electric power industry away from oil.

Beyond the effort to make coal the basic electric power fuel, major increases in the use of coal will likely come from:

- o substitution of electric power for direct petroleum uses;
- o increased use of liquid or gas fuels made from coal rather than oil and natural gas; and
- o greatly increased conversions of present electric power and industrial boilers to coal.

In my view, the analysis in the Sixty Day Coal Report does not adequately address the costs and benefits of pursuing specific policies within these general areas. There is no quantification of the actual coal-use benefits to be derived from the suggestions of the Department of Energy, and so there is no way to judge the relative economic and social value of those suggestions. The actual coal-use increases to be gained from the environmental trade-offs

proposed by DOE would likely not achieve a level of significance, in relation to the social costs, unless accompanied by economic trade-offs to cause earlier fuel switching, synthetic fuels consumption, or fuel-to-electricity shifts. The credibility and acceptance of whatever coal-use policy changes you might consider will rest on accurate and reviewable data and analysis to demonstrate the Administration's understanding of the efficiencies and equities involved in any decisions.

DOE Initiative on Intermittent Control Systems

Of the initiatives contained in the materials made available by DOE and EPA staff for this Sixty Day Coal Report, the only issue on which I have a specific comment is the use of intermittent control systems (ICS). A Department of Energy staff paper prepared for this Report recommends amending the Clean Air Act to permit the use of intermittent control systems to meet air quality standards, as a means of increasing the demand for coal. No data or information currently exists which would indicate that allowing the use of intermittent control systems would have more than a marginal effect on increasing demand for coal. This Department has several concerns about the use of intermittent controls, especially the resulting increased loading of the atmosphere with sulfates and nitrates which contribute to visibility degradation and acid rain. Furthermore, the reliability and enforceability of intermittent control systems have not been demonstrated. For these reasons, and others contained in the EPA paper on this topic, I strongly believe that amending the Clean Air Act to permit use of ICS is not justified by the current information.

DOI Initiatives

I am pleased to report to you the following initiatives that are or will be taken to encourage the increased production, development and use of coal. The initiatives are listed here, and discussed in more detail in the attached report, under the four broad issues mentioned above.

Issue 1: What can be done to expedite decisions by DOI public land management agencies affecting the siting and development of coal-using energy projects?

The land and resource management responsibilities of the Department of the Interior play an essential role in assuring that plans for increased production of coal are accompanied by development of powerplants, transmission lines, rail and slurry transportation systems, water supplies, and other facilities necessary for the increased use of coal. In this regard, the major activities of the Department are in evaluating rights-of-way proposals for transmission or transportation over Federal lands and in compliance with the Clean Air Act Amendments of 1977, assessing the air quality impacts on Federal lands of new coal fired powerplants. Coal production and use is projected to increase substantially in Western

-5-

states by the end of the century. As a result, DOI public management agencies, whose jurisdiction is substantially concentrated in the West, will be increasingly called upon to make difficult decisions involving expanded coal use, environmental protection, and priority use of water.

The Department of the Interior will take the following steps to expedite decisions affecting the siting process:

- o Improve Departmental-level oversight of priority projects being evaluated or permitted by Interior agencies.
- o Reorganize Bureau of Land Management (BLM) headquarters and field offices to improve BLM capability to handle major projects.
- o Develop new rights-of-way regulations under the Federal Land Policy and Management Act to save time and money for applicants.
- o Direct increased attention to BLM land use planning program impacts on coal-related DOI actions.
- o Encourage active coal industry involvement in earlier and more open project planning.
- o Establish new National Park Service technical support function to provide faster and more reliable evaluations of coal facility air quality impacts on the National Park system.
- o Make State governments more active and supportive participants in DOI coal development decisions.

Issue 2: How can the Federal Government manage its coal reserves to encourage the use of coal?

On June 2, I gave my approval to a new Federal coal program that will make 1.5 to 2 billion tons of coal available for prompt leasing and, in the long run, will clear the way for leasing up to 200 billion tons of coal. One of the most critical decisions I made was to streamline the system used by the Bureau of Land Management to determine which Federal lands should be considered unsuitable for coal mining. Another critical decision concerned maximum economic recovery, which, by statute, must be determined before a lessee may mine coal and which requires the lessee to mine a specified amount of coal. In response to further analysis by the Department and concerns expressed by industry, other agencies of the Federal government and the States, I chose a new definition for maximum economic recovery which corresponds with the manner in which economic decisions are made by industry and is far less costly to this Department to administer.

In renewing the Department's program for competitive leasing of Federal coal, I have adopted the following policies and procedures to assure an economic and environmentally-sound program:

- o Improve coordination of the responsibilities of the Department of the Interior in the areas of land use planning, environmental protection, and coal leasing to help to minimize delays and uncertainty.

- o Work closely with the Department of Energy to ensure that leasing activity will be responsive to demand projections.

- o Enforce diligent development provisions in the law to ensure that coal is developed in a timely and assured basis.

- o Better coordinate activities of the Bureau of Land Management and the Fish and Wildlife Service to ensure that coal on Federal lands is mined in an environmentally sound manner.

Issue 3: How can the Federal Government assure a stable and rational regulatory environment and, thus, provide greater certainty to encourage the development of coal?

During the last ten years, major legislation has been enacted affecting where, how and under what conditions coal can be mined. These statutes assign regulatory functions to different agencies and to different levels of government. The uncertainty inherent in implementation of these regulatory functions has been blamed for limiting the movement to coal. As noted elsewhere, it is unlikely that this is currently a major factor inhibiting coal production, development and use. In point of fact, annual coal production from Federal and Indian lands in the West will increase significantly by the mid-1980's as a result of 25 new or expanded major mining plans approved since January 1977, all of which were rigorously reviewed for adherence to Federal regulatory statutes, including applicable standards of the Surface Mining Control and Reclamation Act of 1977.

Nevertheless, it is clearly of paramount importance for the Federal Government to: (1) avoid delay, duplication and unnecessary cost to industry and the general public in the review and approval of mining operations; and (2) assure that regulatory programs are implemented to accomplish their objectives in the most efficient and least burdensome manner.

The Department of the Interior will take the following steps to meet these objectives:

- o Streamline the permit review and approval process.
- o Encourage early identification of reclamation problems.
- o Assure the smooth transition to State regulatory primacy.
- o Establish a comprehensive and credible evaluation system.

-7-

to monitor economic consequences of surface mining regulatory programs.

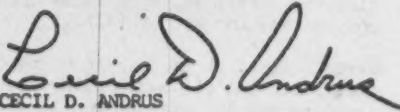
- o Develop a program to explain the surface mining regulatory program and to train operators and their employees.

Issue 4: How can the Federal Government encourage the development of techniques to extract coal in the most efficient, productive and environmentally sound manner?

The primary burden of developing techniques for the extraction of coal in a manner that is not only environmentally sound, but also economically efficient lies with the coal mining industry and its suppliers of equipment and consultants. Because of the importance of coal as a source of energy, however, the Federal Government must do what it can to facilitate and complement the efforts of industry.

The Department of the Interior will take the following steps towards this objective:

- o Clarify the environmental information requirements imposed by the recently promulgated surface mining regulations and how they can be met.
- o Utilize the experimental practices provisions of GSA's regulations, where appropriate.
- o Conduct R&D on ways in which to reduce the overall cost of complying with environmental performance standards.


CECIL D. ANDRUS

Attachments

THE FUTURE OF FEDERAL COAL

Speech by Steven P. Quarles, Deputy Under Secretary, Department of the Interior, at the American Mining Congress 1979 Mining Convention, Los Angeles, California, September 25, 1979

All observers of the Nation's energy future predict an increased role for our most abundant resource, coal. As the relative prices of oil, gas and other energy sources continue to rise, the economics of coal, already favorable for many uses, will no doubt increase coal's share of the Nation's energy consumption. Today coal fills about 18% of these needs; the prospects for substantially increased coal use in the next decade and beyond are quite good.

In many ways this improved outlook for coal reflects the commitment of the Administration and Congress to take steps to meet and deal with our energy situation. Legislation such as the Fuel Use Act assigns an economic premium to the use of coal. The decontrol of domestic oil and natural gas prices will also contribute to the demand for coal by making petroleum consumption relatively more expensive than it already is. Recent legislation which addresses the negative environmental affects of coal mining and use will remove many of the institutional and social constraints to increased coal use. The President's July 16 proposals regarding increased development and commercialization of coal liquefaction and gasification will provide an added stimulus to the movement to coal.

In my talk today I would like to (1) place in context the role of Federal coal in achieving the Nation's objectives of increased coal use, (2) discuss briefly the program put in place by Secretary of the Interior Cecil Andrus to resume leasing of Federal coal, (3) addresses in some detail the procedures for drawing on the expertise of the Departments of Energy and the Interior in setting leasing targets, and (4) conclude with steps we are taking to ensure that the targets will appropriately respond to market and other forces.

If the Nation is to achieve its objective of greatly increased use of coal, development of coal owned by the Federal Government will have to play a major role. The Federal Government owns around 60% of the coal reserves located west of the Mississippi River. Because of widely intermingled Federal and non-Federal coal ownership patterns, another 20% of western

coal, although not Federally owned, is dependent on the availability of Federal coal for its development. Thus, because of the massive reserves in the West, the percentage of total U.S. coal reserves owned or influenced by the Federal Government is around 45%.

In some key producing regions, the dependence on Federal coal is even greater. The Powder River Region contains some of the highest quality, least costly to mine coal deposits in the world. A large share of future western coal production — more than 50% by 1990 according to Department of Energy projections — is expected to come from this region. Almost all the coal in the Powder River Region is contained in areas of predominant Federal ownership, in mixed Federal and non-Federal checkerboard areas, or on Indian reservations. Less than 10% of the Powder River coal can be mined without associated Federal coal development.

The new emphasis on synthetic fuels production in national energy planning gives added importance to the vast lignite deposits in the Fort Union Region in eastern Montana and North Dakota. Because much of this land had high agricultural productivity and was conveyed out of Federal ownership under the Homestead laws of the last century, the share of non-Federal coal ownership is considerably higher than in the Powder River Region, more than 60%. But even in this region, because of intermingled ownership, less than 40% of the coal can be produced without associated Federal coal development.

As can be seen from these two regions alone, any strategy to enhance national coal production is dependent on the availability of Federal coal.

Although the West contains 54% of the Nation's coal reserves, western coal production — and production of Federal coal along with it — have failed to rise above very modest levels until recently. In 1962, western coal production was 20 million tons, only 5% of national production. By 1972 western production had tripled, but was still only 10% of national production. The low levels of production in the West reflected the high cost of transporting western coal to eastern markets and the dominance in the West of hydroelectric and oil and gas sources of electric power production.

Federal coal development was not, until recently, a large part of western coal production. In 1962 production of Federal coal in the West was only 25% of overall western production (5 million tons). By 1972 Federal coal development had fallen to 15% of western production (9 million tons).

These trends have been reversed dramatically in the past half decade. Western coal has become the fastest growing part of the U.S. coal business and Federal production in particular has been increasing rapidly. The principal cause, of course, has been OPEC and the oil and gas price increases, which are making oil and gas no longer economic for new power production. Other important factors have been the greater ability of western coal to meet air quality standards and the lack of acceptable new sites for hydroelectric power.

By 1978 western coal production had climbed to 178 million tons, which was 27% of national coal production. Federal coal development was 60 million tons, or one-third of total western production. Thus, Federal coal production had increased five-fold in the half decade since 1972. Although still lagging behind the Federal percent of western coal reserves, Federal coal development had risen to 34% of western production.

All indications are that future western coal production will continue to grow rapidly. The Department of Energy projects western coal development of more than 350 million tons in 1985 and almost 700 million tons in 1990. By 1990, almost 50% of the Nation's coal production will occur in the West. Inevitably, a major share of that production will have to be Federal coal.

Of course, in order for Federal coal to be produced, it must be leased to the private sector. As you well know, for almost a decade Federal coal leasing was halted by administratively and judicially imposed moratoria and discontinuous efforts to develop new Federal leasing policy. In 1970, the BLM issued a disturbing report which catalogued the failures in existing leasing policy. The report disclosed that although the amount of Federal lands under lease had increased almost ten-fold, from 80,000 acres to 778,000 acres in the previous 14 year period, production of Federal coal had actually declined from 10 million tons to 7.4 million tons. This

was followed by two leasing moratoria imposed by the Secretary of the Interior in 1971 and 1973, an effort to develop a new leasing program in 1974 and 1975, a court imposed moratorium on leasing under the new program in 1977, and the passage of half a dozen laws between 1975 and 1978 which reformed the statutory base for coal leasing. When the new Administration assumed office in 1977, it was faced with the administratively imposed moratorium, a coal leasing program which a Federal court would soon find inadequate, and a Congressional commitment to modernize the coal leasing laws.

The Administration joined in supporting the legislative efforts and formulated its own policy concerning coal in the 1977 National Energy Plan and Presidential Environmental Message to Congress. The Department settled the law suit after the court found against, and enjoined, the last Administration's proposed leasing program. The settlement permitted us to immediately lease to avoid hardships from mine closing and the hoarding of Federal coal, to gain valuable on-the-ground leasing experience which had been missing for six years, and to focus all our efforts on developing a coal management program responsive to the new laws and Presidential initiatives.

The Secretary accorded the development of a viable and effective coal management program a priority in the Department second only to the Alaska lands legislation. The result was an intensive one and a half year program development effort.

The Secretary directed that a Department-wide coal policy review be undertaken, headed by the Assistant Secretary for Land and Water Resources and staffed by a newly-created Coal Leasing Office at the Secretarial level. Over 50 task forces, often composed of representatives of four or five bureaus in the Interior Department, several other Federal agencies, and State governors, were organized. These task forces, some conducting extensive field tests, contributed environmental and economic analyses upon which the program was built. Participation by industry, environmentalists, State and local government was actively solicited.

To encourage active discussion of all views during the development of the program, we took the unprecedented step of making all documents available to interested persons upon request, even where the Department could have withheld the documents under the Freedom of Information Act. We distributed copies of draft issue

papers and other memoranda virtually as soon as they were typed and without regard to policy consistency. We briefed all major interest groups on numerous occasions and met with each of them to discuss in detail the proposed program and regulations. Finally, the Secretary personally met with representatives of the coal industry and the environmentalists shortly before he made his final decisions on the program.

Agreeing on little else, both industry and environmental spokesmen asserted to the Secretary that the program development effort was one of the most open and accessible decisionmaking processes they had witnessed in the Federal Government.

These activities culminated in the publication of a final environmental impact statement which EPA and industry spokesmen praised as a model statement and in the June 1 and 2 decisions of Secretary Andrus on some 500 policy options in a 400 page Secretarial Issue Document. The Secretary's decisions were reflected in the final regulations for the new Federal coal management program published in the Federal Register on July 19.

The program has four major objectives:

1. Give the Nation greater assurance of meeting national energy policies and goals. Two principal ways in which this objective is to be met are through procedures for setting leasing targets and for ensuring participation by all interested parties — most particularly coal developers — throughout the leasing process.

2. Provide a means to promote a more desirable pattern of coal development to ensure the best mix of public and private uses of the public lands and to avoid unnecessary environmental and social impacts. The principal method for accomplishing this objective is to make certain, as the 1976 Federal Land Policy and Management Act and 1977 Coal Leasing Amendments Act require, that coal development decisions follow, not precede, multiple use land planning. During land use planning, coal lands would be screened to determine if they are unsuitable for surface coal mining operations in accordance with the requirements of the Surface Mining Act. An innovative

procedure in the coal development planning which follows land use planning — the ranking of potential lease tracts on a multi-state regional basis rather than within the much smaller planning units — assures that the patterns of tract development and their likely social impacts on local communities are fully considered. Finally, instead of writing environmental impact statements on each individual tract proposed for lease sale, all proposed sales in the region for a four year period will be covered by a single statement. This not only reduces paperwork but assures that the cumulative effects of environmental and social impacts from the sales of individual tracts are analyzed.

3. Assure that State governments and local communities participate in the decisions about where and when Federal coal production will take place. We've learned the hard way that to exclude State and local governments from the decisions to develop Federal lands too often means the development will be frustrated. The new coal management program provides for State and local government participation throughout the leasing process by a variety of means, but most importantly by membership on innovative coal region teams made up of State governors and State Directors of the Bureau of Land Management. These teams will play particularly key roles in the regional ranking of tracts and in the setting of regional leasing targets.

4. Increase competition in the western coal industry. Most of the program features directed at enhancing competition are strict requirements of legislation — for example, discouraging the buying and holding of Federal coal without development and enforcing acreage limitations on lease holders. Others are more an exercise of legitimate administrative discretion — examples of these are an emphasis on special opportunity sales for small businesses and public bodies and the possible use of intertract sales.

The major steps in the normal leasing process are:

First — general land use planning (which takes from 2-4 years)

Second — regional activity planning (taking from 1-2 years)

And third — Pre-sale and sale procedures (which take 3-6 months).

Once significant new competitive coal leasing begins in 1981, and certainly by 1983 (when the program is in full operation), you will not be sensitive to these time periods because the process will be supplying Federal coal to the market continuously. This is because the steps I just described will be running in parallel in the regions (for example, land use planning for sales four years away will be conducted in a region simultaneously with activity planning for sales 2 years off). Further, work load peaks will be staggered among the regions, which will also act to ensure the constant availability of coal.

Of course, the coal management program includes much more than just new competitive coal leasing. Among other matters, it also provides for the administration of existing leases, preference right lease applications, and exchanges. However, I would like to devote the remainder of my remarks to a fourth step in the leasing process — the setting of regional leasing targets for Federal coal. This step, which proceeds contemporaneously with all three of the previously mentioned leasing steps, is designed to ensure that the new coal management program will be ready with environmentally acceptable coal for lease when that coal is needed by coal producers. It permits us — indeed forces us — to factor national energy policy considerations into the decisions on how quickly and extensively we should release Federal coal for sale.

The establishment of leasing targets is not a discretionary addition to the new coal management program. It is mandated in very general terms by the Department of Energy Organization Act of 1977. The procedures for target setting were discretionary and are set forth in a 1978 Memorandum of Understanding between the Secretaries of the Interior and Energy and the July 16 coal management regulations. These procedures draw on the special expertise of the two Departments — DOE's broad understanding of national energy policy and energy supply and demand trends and Interior's on-the-ground expertise concerning individual producers' needs for Federal coal and the capability of the Federal lands to meet those needs.

The Secretary of Energy starts by processing regional coal production goals for five, 10 and 15 years in the future. These goals do not distinguish between Federal and non-Federal production of coal. Within 60 days, the Secretary of the Interior responds with comments on the capability of Federal resources to assist in reaching these goals, the acceptability of the balance between environmental

and resource development objectives, impacts of proposed coal development on other natural resources and other matters. Within 30 days of receipt of the Interior comments, the Secretary of Energy announces his Department's production goals for each coal region.

The first coal production goals are not expected to be announced by the Department of Energy until mid-1980. The modeling and other procedures to be used are currently under discussion — in part by a new staff level working group from the two Departments. Already, however, DOE has provided projections of future production to the Department of the Interior for use in the coal management program environmental impact statement and in setting the preliminary targets Secretary Andrus has already announced for the first lease sales. The basic methods used in making these projections will probably also be used in establishing future coal production goals.

The basic objective in setting production goals is to determine the way of satisfying national energy requirements at the lowest overall cost to the Nation. The initial step is to specify future key factors such as national income levels which will influence future energy requirements. The Department of Energy then compares and trades off energy production from coal with production from other energy sources to determine which would be least costly in meeting these requirements. Where coal is used, types of coal from different locations are examined and the coal that results in the lowest overall production cost is selected. Alternative ways of meeting environmental standards, transportation routes and modes and other elements of energy production are all considered and the lowest cost alternatives chosen.

Once the Department of Energy announces its production goals, the Department of the Interior begins a process leading to the establishment of targets for future Federal coal leasing. The DOE goals are provided to the Federal-State regional coal teams that are responsible for selecting tracts and generally planning the future regional coal sales. Each team will consult with State and local governments and other Federal agencies, hold public hearings and conduct its own analysis to assess the announced DOE production goal for the region. The coal industry will have a major role to play in providing comments to each team on the reasonableness and feasibility of the DOE goal. The regional coal team will communicate the results of its review of the DOE goal to the Secretary of the Interior.

Based on the regional coal team review and other information, the Secretary will then determine whether any adjustments in the announced DOE regional goals are desirable. He might, for example, determine that the DOE goals would cause a greater increase in population in a region than it could reasonably be expected to absorb in a short time. Taking account of any adjustment in the DOE regional goals for production of both Federal and non-Federal coal, the Secretary will announce preliminary targets for the future leasing of Federal coal in the regions.

The preliminary Federal leasing targets will aim to provide sufficient coal to make up the difference between regional coal production goals and coal production already expected to occur without further Federal leasing. The total amount of coal likely to come into production as a result of different levels of future Federal leasing will be assessed. The targets will consist of coal reserve tonnages and will be set for a four-year period.

After announcing the preliminary leasing targets, a second set of hearings will be held. State governors will be formally consulted, particularly as to their views concerning the social and economic impacts on the state. After receiving these comments, the Secretary will then announce final regional leasing targets.

The final regional leasing targets will provide guidance to the regional coal teams for the planning of lease sales and the preparation of the four-year regional lease sale environmental impact statements. Opportunity for further public comment on the leasing targets will be provided in the public review process for the draft environmental statement.

The determination of a Federal coal leasing target thus will be made only after extensive opportunity for comment by industry, states, environmental organizations and other concerned parties. This comment process will help to ensure that the final leasing targets provide sufficient Federal coal to satisfy national energy production requirements while also protecting the environment and social fabric of the western regions containing Federal coal.

Despite all our best efforts to obtain as much information as is possible, there is still, however, likely to be a considerable amount of uncertainty remaining. It is simply not possible to anticipate all the events that will influence national energy requirements five or 10 years in the future. Just in the last year or two a number of unexpected major changes (Three Mile Island and the new

emphasis on synthetics, for example) have caused significant revisions in future energy assessments. There will also be uncertainty as to the levels of coal production that would be forthcoming in the absence of new leasing by the Federal Government to stimulate further production. We recognize these uncertainties and are taking steps to deal with them in our decision making process.

First, the process of setting production goals and leasing targets will be a continual one, with DOE updating its "macro" assessments every two years and DOI revising its leasing plans as appropriate.

Second, the Secretary of the Interior will not necessarily choose a leasing target that represents an amount of Federal coal just sufficient to reach the regional production goal. Instead, the Secretary may choose to adjust the targets upward in order to provide greater assurance of meeting production goals. There may be other reasons to raise the targets as well. More leasing may be needed to strengthen competition in the coal industry in a particular region — the Antitrust Division of the Justice Department has been particularly concerned about this. The Interior Department may also want to lease simply to improve the pattern of coal development in a region, where potential Federal lease sites are superior economically and/or environmentally to sites that otherwise would be developed in the absence of Federal leasing.

Third, in deciding just how much to lease, an important consideration will be the losses or damages that would result from leasing what turned out to be too little Federal coal, as compared with the losses or damages that would result from leasing too much. Presently, I think it would be accurate to say that we regard the consequences of leasing too little as a more serious threat than the consequences of leasing too much.

The risks in leasing too much Federal coal are significant, although less obvious than those of leasing too little and also perhaps less likely to receive sympathy from this audience. One concern is simply the administrative costs to the government in delineating, analyzing, ranking and offering for sale a substantially larger number of tracts than are needed. Excessive leasing would create greater uncertainty about the amount and location of future coal development in the West, making much more difficult the efforts of State and local governments to properly plan to mitigate the expected social and economic disruptions. The ability of the

Federal Government to influence coal development patterns to minimize those disruptions would be reduced. Finally, in the presence of the 10-year diligence requirements, excessive leasing could well be disruptive to coal markets. Some companies might enter into premature production just to keep leases and there could be significant administrative costs in cancelling leases that had not been diligently developed. /

Despite these points, we recognize the greater risks in terms of cost to the Nation of underleasing — not leasing enough Federal coal to meet future energy needs. Our current assessment is that this would not cause the Nation's needs to go unmet, but that it would increase the cost of meeting them. Production would be displaced — both within a region and inter-regionally — from better Federal coal to less desirable non-Federal deposits. We have no real way of knowing just what such displacement costs would be, although a computer study for the Interior Department did come up with an estimate of around \$1 billion per year if there were no further Federal leasing at all.

In this regard, following the President's July 16, 1979, message, Secretary Andrus has established a Departmental-wide Petroleum Imports Reduction Policy Group to monitor carefully and respond to any needed changes in the Department's programs. As Chairman of that group, I can report that the preliminary indication from the staff work conducted to date is that with some adjustments in regional sale dates and leasing targets the coal leasing program can accommodate the synfuels programs requested by the President without major changes.

I believe this finding that massive changes in the new coal management program will not be necessary to meet synfuels objectives will, if it holds up under further scrutiny, prove to be of critical importance to the fortunes of the coal industry and Federal coal production. We have lived through a decade of estrangement between the coal producing industry and the managers of Federal coal, during which we have seen the rules and procedures altered dramatically by legislation, litigation, and regulations. We firmly believe that, above all else, we need a period of stability, without further changes in or challenges to the Federal coal management process.

For the first time in eight years, we have a coal program in place which can lease coal unimpeded by administratively or judicially imposed moratoria. While a program of this national scope and diverse implications can never expect comprehensive enforcement by all interests, we believe we have struck a good balance. I am happy to say that virtually all interests have manifested a willingness to work within the program to assist us to renew substantial

competitive Federal coal leasing in a manner that is both responsive to coal demand and responsible to environmental values. That willingness is critical to the success of the program. It will work if you and the other members of your industry actively participate throughout the leasing process. We are heartened that you appear ready to do so. At AIC's last coal convention in St. Louis, Assistant Interior Secretary Guy Martin offered to the industry a series of workshops on the Federal lands planning process and how industry should participate in it. You took us up on that offer and the workshops are now being held throughout the country. The turnout has been excellent. We continue to encourage you to take advantage of all the opportunities for participation in the leasing process. By working in partnership, we will be successful in ensuring that Federal coal plays a critical role in meeting our national energy needs.

December 1979

Department of the Interior
Federal Coal Management Program

**FINAL REPORT AND RECOMMENDATIONS FOR THE SECRETARY ON
FAIR MARKET VALUE AND MINIMUM ACCEPTABLE BIDS FOR
FEDERAL COAL LEASES**

Office of Policy Analysis
U.S. Geological Survey
Bureau of Land Management

ACKNOWLEDGEMENTS

This report and recommendations to the Secretary represents the results of 2 years of steady effort by three task forces, each building on the effort of their predecessor. The first group to work on this effort was led by John Pederson of the USGS, who has persevered throughout this effort, and included Don Fisher of the BLM and Jules MacKallor, Edward Rodgers, and Gregory Spanaki of the USGS. The second group brought the effort up to the June draft report to the Secretary and initial recommendations; it was led by Patrick Geehan, and included Cliff Brownell, and Neil Jacquot of BLM, Donald Bieniewicz of Office of Policy Analysis (PPA), and MacKallor, Loren Setlow, Ray Cheeseman, and Thomas Blair of the USGS. Major contributors to this report are Pederson, Eric Kaarlela, William Watson, and Rich Bernknopf from the USGS, Allan Dickerman and Brownell of BLM, and Bieniewicz and Charles Towle of PPA. Numerous other persons have contributed to the final efforts to reach a consensus recommendation. Key contributions were made by Gary Horton, Chief, Branch of Onshore Evaluation, USGS; Charles Rech, Acting Director, Office of Coal Leasing, Planning and Coordination; Lester Silverman, Director, Office of Policy Analysis; and Lawrence McBride, Assistant Solicitor, Onshore Minerals. Anthony Prato and Robert Lawton of the Department of Energy Leasing Policy Development Office have also supported these efforts through the latter stages of development. Finally, the task force was supported in various technical aspects of its study by Hoff Stauffer, President of ICF, Inc., and Daniel Klein and Robert Black of his staff. ICF also assembled an outside expert panel comprised of Dr. James B. Ramsey, Chairman of the Department of Economics at New York University; Dr. Richard Gordon, Professor of Mineral Economics at Pennsylvania State University; Mr. Laurence Moss, a consultant on environmental and energy policy and Chairman of the Environmental Caucus of the National Coal Policy Project; Mr. Charles Knight, President of Knight Appraisal Services; and Dr. Donald Gentry, Professor of Mining Engineering at the Colorado School of Mines who made many useful suggestions to the task force.

Charles L. Towle
Chairman



CONTENTS	PAGE
Section I: Fair Market Value Task Force Recommendations	I-1
Findings	I-2
Major Recommendations	I-3
Evaluation of Large Tracts	I-4
Evaluation of Small Tracts	I-8
Other Major Recommendations	I-9
Review of Recommendations of Draft Report	I-10
Section II: Background and History of Issue	II-1
Background	II-1
Economic Rent	II-3
Key Issue in Federal Coal Lease-Pricing Policy	II-6
History	II-9
Section III: Major Procedural Options Considered by Task Force	III-1
Modification of Present System to Enhance Appraisal Aspects ...	III-2
Use of Averaging DCF with Bids Received	III-4
Use of Flat-rate Minimum Acceptable Bid	III-6
Use of a Reservation Price that Reflects Regional Ranking	III-8
Exclusion of Quasi-rents from DCF Calculations	III-11
Mixed System	III-19
Section IV: Modifications to Federal Coal Management Procedures	
on Fair Market Value	IV-1
Fostering Greater Competition	IV-2
Unitization	IV-2
Avoidance of Large Front-end Payments	IV-4
Diligence	IV-5
Sales Methods	IV-5
Information Availability	IV-5
Access	IV-5
Release of DCF Models to the Public	IV-7
Release of Data to the Public	IV-9
Profit-Sharing Study	IV-11
Evaluation of Small Tracts	IV-14
What Lands Should be Aggregated with Federal Tract to	
Derive Value?	IV-14
How Should the Value of Aggregated Lands be Assigned to	
Ownerships?	IV-15
Should the Department Seek to Enhance Pre-sale Industry	
Inputs?	IV-16
What Costs and Price Vintages Should be Used for Tracts	
that are Most Likely to be Part of an Existing Operation?	IV-18
Discount Rate Procedure	IV-19
Section V: Study Papers	V-1
Summary of June SID Report	V-2
Fair Market Value, Economic Rent and Federal Coal Leasing	V-12
The Key Issue in Federal Coal Lease Pricing Policy	V-48
Notes for a Proposal for Flat-rate Minimum Acceptable Bid	V-60
The Intertract Approach	V-63
Public Disclosure of Resource Mining and Economic Data	V-65
Procedures for Evaluating Small Tracts	V-73
Valuation of Surface Estate	V-113
Dry Run of Comparable Lease Approach	V-117
Process of Establishing Minimum Acceptable Bids	V-125
Comparable Lease Approach to Estimating Fair Market Value	V-129
Recommended Sale Procedures	V-138
Estimating the Degree of Uncertainty in Federal Value	
Estimates	V-141
Analysis of Alternative Methods for Estimating Expected	
Economic Rent	V-146
Fair Market Value and the Choice of Cash Flow Discount Rate ...	V-159
Written Comments on Fair Market Value Received by the Task Force ...	V-176

SECTION I. FAIR MARKET VALUE TASK FORCE RECOMMENDATIONS

In June 1979, the Secretary of the Interior instructed the Federal coal leasing fair market value task force "... to develop a consensus on implementation of the (earlier fair market value task force) recommendations before remanding them to the appropriate office and bureaus for implementation." The task force is pleased to report back to the Secretary with general consensus recommendations for Departmental policy on determining fair market value and minimum acceptable bids for Federal coal.

Consensus on an issue as multi-dimensional as that of minimum acceptable bids requires the balancing of many Departmental goals. The Congress mandated in the Federal Coal Leasing Amendments Act of 1976 that no Federal coal lease can be sold for less than its fair market value (FMV). However, there are many other Federal goals that are just as relevant to Federal coal lease minimum acceptable bid policy. These can be summarized as follows: promotion of national economic efficiency in the development of the resource; timely development of the resource (otherwise known as resource conservation); promotion of competition in the coal industry; countering rising energy prices and inflation; an equitable sharing of Federal coal value of production between the public and producers; socio-economic responsibility (50 percent of Federal coal income is returned to the originating State); and national security (national energy supply) considerations. Achieving a favorable balance among these goals in an administratively workable system lies at the heart of our recommendations on minimum acceptable bid issues. Note that maximization of return from coal properties is not on this list of goals. In the final analysis the task force recognizes that political judgment is required to find the proper balance, and it is in this spirit we submit our final report.

In forming these recommendations the task force has "sought and applied" industry and public information and views, again, as instructed by the Secretary in his June 2, 1979, decisions on Federal coal management. Transcripts of a fair market value town meeting are being submitted with this report.

In the remainder of this section the recommendations of the task force are represented. This is followed by the background and history on the fair market value issue. All readers not familiar with this subject are well-advised to read the brief overview provided by Section II before considering the task force recommendations. Options considered by the task force are then presented in Sections III and IV. Except as incorporated by reference in Section I, the suggestions here are provided to indicate more fully the scope of the options considered by the task force, as well as to provide fuller descriptions of recommendations and guidance on their intent. These options are followed in Section V

with study papers prepared by the task force that led up to the options and recommendations. Contractor studies and a summary of public comments on fair market value are reported separately.

At the instructions of the Director, Office of Coal Leasing, Planning and Coordination, the FMV task force did not consider two important questions: the first, who will be carrying out the new procedures recommended by the task force; and the second, how will the transition to the new procedures be conducted? OCLPC's recommendations to the Secretary on these matters should be coming forward as soon as all parties have had an opportunity to fully digest the implications of this report. Cost estimates should be available then. The FMV task force recommendations will require modest changes to existing coal leasing regulations; strengthening the recent memorandum of understanding between BLM-GE-CEM, which will replace Secretarial Order 2948 for coal; and modifying the existing Departmental Manual instructions on leasing. By concurring to the FMV task force recommendations with or without change, the Secretary will be indicating his approval of making the necessary changes to these documents.

Findings

The recommendations to come are based on eight basic findings. These are:

1. The inherent uncertainty of conducting evaluations through a discounted cash flow analysis of projected mine earnings requires that this procedure be applied conservatively.
2. The government is the price leader for western coal properties due to its vast ownership of unleased, low-cost coal. All lease prices will tend to go to the level the Department chooses.
3. Supply curves for western coal types are at the present highly elastic. There are great amounts of coal available at roughly the same cost. Under this structure true economic rents will be relatively small, but probably still significant for the government's better coal properties.
4. The terms fair market value, meaning the results of a mineral property appraisal, and minimum acceptable bid have been confused in the past. Receiving fair market value does not mean getting the maximum return for coal properties.
5. Currently fair market value for many western coal properties is already obtained through bonus and royalty minimums set by the Congress and Department policy.

6. A policy of maximum return for Federal coal properties is inconsistent with meeting Federal coal leasing goals and targets.
7. Coal companies appear to be quite successful at passing through costs of coal properties to the consumer in the coal prices they charge.
8. If the Department observes excess profits or lack of competition in the post-sale market, the proper Departmental response is to lease more, not to raise reservation prices, as this yields the greatest social benefits.

Major Recommendations

The options leading to these recommendations are presented in Section III. The following options were considered by the task force:

Modification of Present System to Enhance Appraisal Aspects
 Use of Averaging DCF with Bids Received
 Use of Flat-rate Minimum Acceptable Bid
 Use of a Reservation Price that Reflects Regional Ranking
 Exclusion of Quasi-rents from DCF Calculations
 Mixed System

The task force in June noted there were two classes of Federal tracts each with distinct characteristics--small tracts, i.e., those tracts that if mined alone could only be mined at high costs with little or no profit and tracts that were of efficient size for operation standing alone.

The task force has concluded that presale evaluation of small Federal tracts is, under existing law, an unmanageable problem by any technique other than comparable sales analysis. The task force, therefore, recommends that small and large tracts be treated differently when determining minimum acceptable bids. The task force would, for now, define small Federal tracts for operational purposes as:

1. Any tract qualifying for lease on application under subpart 3425 of the Federal coal management regulations; or
2. Any tract for which the USGS designated responsible official and the BLM-authorized officer jointly determined significant economies of scale exist if mined with adjoining non-Federal coal. Generally, significant economies of scale exist if the total cost per ton of production from the candidate small tract operated as a mining unit in conjunction with the adjoining non-Federal coal or with existing leased Federal coal were on the order of 15 percent less

than costs with the candidate tract operated alone or as a mining unit made up entirely of the most efficient block of contiguous, unleased Federal coal.

3. In addition, any small tract qualifying for lease on application because it is outside coal production regions or because it is a special hardship lease or any tract qualifying because of loss of efficiencies of scale should not contain greater than 30 percent of the unmined reserves of the probable combined mining unit.

Additional study is needed to determine the final terms of this definition. This study could be carried based largely on a cost effectiveness goal; i.e., at what size tract does the cost of evaluation get paid back from the incrementally higher return on the tract? It is anticipated this definition would class over half of the evaluations that would be needed over the next 3 years as small tract evaluations.

The task force recognizes that its recommendation on small tracts will increase the attractiveness of application leasing relative to normal leasing. A safeguard is provided in the regulations (43 CFR 3425.1-8(a)(2)) against abuses of the lease-on-application provisions. The authorized officer, by regulation, shall reject an application when it would violate the integrity of the normal leasing process. Abuses are most likely under the bypassed coal category of application leases. Bypassed coal is (43 CFR 3400.0-5(d)) "an isolated coal deposit that cannot, for the foreseeable future, be mined economically and in an environmentally sound manner either separately or as part of any logical mining unit other than that of the applicant ..." (emphasis added). The task force recommends that the Bureau of Land Management re-examine this topic in light of the increased attractiveness of small tracts and issue instruction memoranda or memoranda amendments that ensure its field officers understand the concept of integrity of the leasing process and the basis for making this judgment. Except where coal is needed immediately for production maintenance, no applications for leasing should be accepted where the possibility exists that the application lands, alone or in conjunction with other Federal lands, could constitute a mining unit or otherwise be leased through the normal leasing process in the foreseeable future.

Evaluation of Large Tracts

The task force recommends that large tracts continue to be evaluated in a manner similar to the present system; that is, the Department would continue to carry out case-by-case discounted cash flow analyses and comparable sales analyses. It recommends the following procedural changes.

1. The price used in the discounted cash flow should be the breakeven price of coal from the marginal coal mine that could enter production with new scheduled Federal leasing rather than a current price determined by market survey. Generally, the model should be run with conservative estimates of input. This price, with necessary adjustments for coal quality differences, would be applied to all large Federal tract evaluations within the lease sale area. The task force believes that at present it is highly probable this marginal price would be lower than local prices seen in the present market. The present market price is higher than marginal for several reasons, but basically due to the immediate period of energy price increases. The task force believes use of this competitive market price, with resulting lower evaluations, is justified because it will:
 - a. Avoid the government's being caught in the position of supporting high coal prices by not allowing downward movement of coal prices to competitive market levels.
 - b. Be a closer approximation of true resource rents than the rents presently available which are a combination of resource rents and transitional quasi-rents caused by major and sudden readjustments in the energy sector. Such transitional quasi-rents will exist for only so long as it takes for new mines to enter production to meet new demand for coal.
 - c. Ensure that the prices the Federal Government charges for its coal leases are compatible with its coal goals and targets.
 - d. Ensure the government would still receive significant income for its best, large coal deposits.

There are two principal approaches the task force sees as feasible for determining the competitive market price. These are determination of price through computation of the market clearing price in a national coal distribution model and determination of price by computing that price needed to cover costs plus return to equity on the marginal logical mining unit constituted from among the Federal tracts offered or a smaller market group based on mining costs. Both systems should be followed during the interim period when this approach is being introduced into use. Responsibility for computing these two prices and for continuing to study coal markets should be assigned one office. Continuing studies of coal markets would be used to provide additional information in coming to a single recommended price for use in tract evaluations and in order to maintain a check on the task force's conceptual model of the western coal market. The office given this responsibility should report back to the Secretariat

any determinations that invalidate either concepts or methodology behind the task force's competitive price recommendation. The evaluation group, in the main, for large tracts would continue to conduct business as usual, carrying out analyses and continuing to survey market prices. Market price results would provide a basis for comparison and for monitoring the size of quasi-rents during the introductory period. The existing discounted cash flow process has a capability to report values over a wide range of prices (see Figure 1).

Supply prices are typically generated using national coal distribution models together with projected levels of coal production. The prices computed by these models are the same conceptually as the competitive prices recommended for use by the task force—the break-even price of the marginal mine. Using the second method of price determination requires identifying the marginal LMU among the Federal tracts in the upcoming sale. It seems consistent to tie this identification to the Federal coal management tract ranking process, a large part of which is based on judging the relative desirability of coal tracts being considered. The marginal tract would be that tract that just satisfies the regional target, though to be more certain, other tracts above and below the marginal tract should also be included in the computation. A discounted cash flow with continuous variation of price, such as is suggested by Figure 1, would quickly show the break-even price for the marginal value tract.

2. If the Department continues to use an inflation-free discounted cash flow, it should incorporate correction factors to account for the real loss of invested capital due to too low depreciation in the DCF model (see ICF report to task force). (BLM does not concur in this recommendation because of the difficulty of predicting long-term inflation rates.)
3. The Department should adopt a procedure for evaluating discount rates used in the discounted cash flow based on a formula that recognizes changing debt-to-equity ratios, changing long-term borrowing rates, and industry pre-project rates of return. The discount rate obtained through the procedure should be continually updated.
4. A formal comparable sales analysis should be conducted on all large tracts by personnel trained in appraisal methods; further, the responsible agency should be assigned to study the use of large tract comparable sales data in the same manner as that for small tracts, i.e., a benchmark fair market value that is periodically updated.

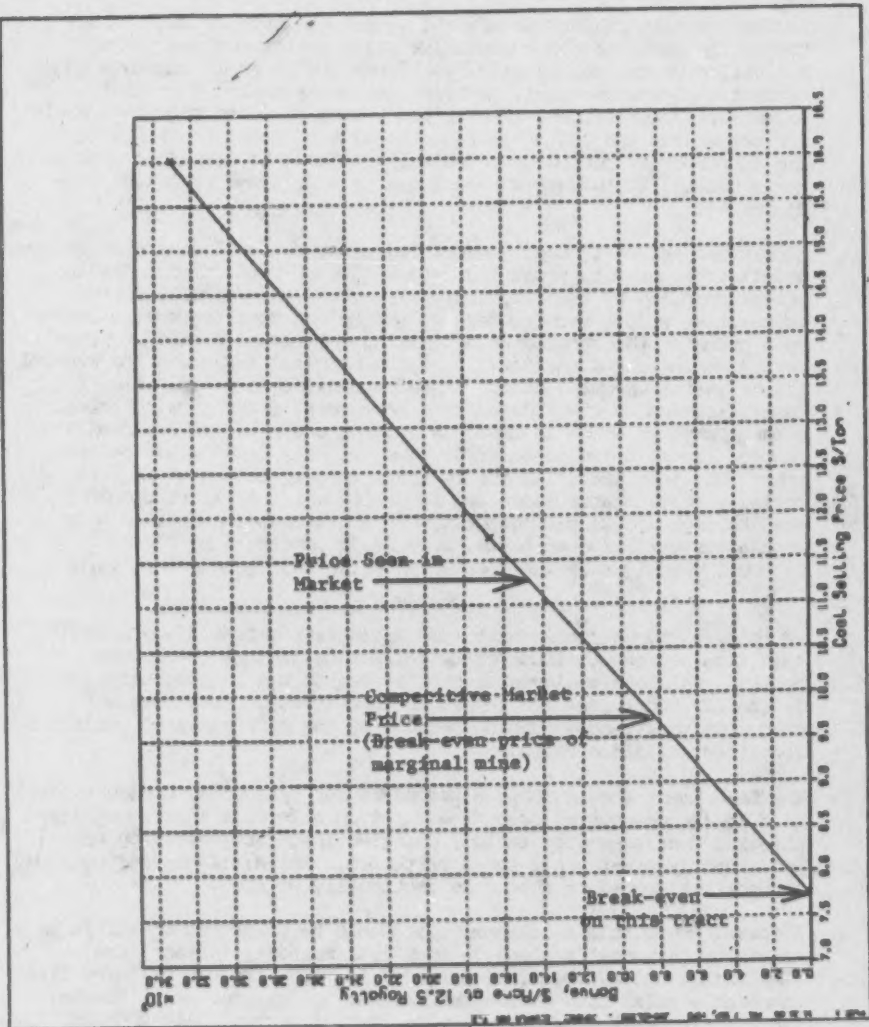


Figure 1. Typical mine value versus coal price relationship as generated by discounted cash flow analyses

5. The Department should set the large tract minimum acceptable bid at the larger of the comparable sales or discounted cash flow analysis values. These values must also exceed statutory and policy minimums in order to be considered.

Evaluation of Small Tracts

The FMV task force has determined that at the present time small tracts appear to have fair market values less than the following minimum acceptable bids (set by statute and existing Departmental policy):

\$25/acre and 12.5 percent royalty for surface coal.

\$25/acre and 8 percent royalty for underground coal.

This determination is based on the comparable lease sales data acquired for the April 1979, task force report and on data acquired for a dry run of the comparable sales analysis technique this summer (see working paper by C.E. Brownell). Only one-fourth of the DCF evaluations of small tracts on a stand-alone basis over the past 2 years yielded values greater than the basic royalty and bonus. Evaluated as viable economic units, i.e., taking into account the economies available to the applicant because of his other coal ownership, two-thirds yielded values greater than the minimum. The added return from one out of four small tracts is unlikely to repay the Department the cost of conducting the evaluations. Further, in many cases economic theory would say that without bargaining, which is excluded by law, small tracts are of zero value or just what the bidder will offer on the basis of goodwill. A final consideration is the inherent difficulties of performing discounted cash flow analyses—which are greatest for small tracts because of higher levels of uncertainty and increased numbers of assumptions. The FMV task force, therefore, recommends that in the interim for small Federal tracts the Department should, without conducting pre-sale evaluation, set minimum acceptable bid at the above minimum acceptable levels. It further recommends that:

1. The Department's designated agency should conduct a study and report every 6 months to the Secretary on comparable lease sales, beginning June 30, 1980. This report should contain sufficient data and analysis from comparable lease sales to ensure the Secretary that the Department is receiving at least fair market value for small tract leases in all regions. The report should suggest new minimum acceptable bid levels where appropriate; in this way the Secretary could continue to be assured of receipt of fair market value. The report's recommendations may recommend stratifying coal tract evaluation minimums by area of mining, general type of coal, or mining characteristic, such as overburden ratio.

2. The definition of small tracts previously described should be adopted on an interim basis; however, further study should be conducted to determine the most cost-effective definition. Metallurgical coal and tracts proposed for unitization would be evaluated using large tract techniques.
3. The Department should begin a study of acceptable minimum bids for coal mined by truck and shovel, contour mining techniques in order to determine whether the present 12.5 percent surface minimum royalty in this case is too high (specifically in the case of Southern Appalachia).

(Technical recommendations on small tracts are presented in Section IV.)

Other Major Recommendations

The following recommendations are more fully described in Section IV on "Other Options" later in this report.

1. The Department must do all it can to enhance competition in coal lease sales. With this in mind, the task force recommends that the Department proceed with a trial voluntary unitization effort on one of the Green River-Hams Fork tracts. The task force believes that a trial effort on a tract that appears conducive to unitization is the quickest and surest way for the Department to learn how to handle this function and the problems involved. Unitization by overcoming ownership patterns that appear to favor some potential bidders over others would significantly improve sale competition. It further recommends that sales procedures used in coal leasing be investigated by the Bureau of Land Management to find and apply the best sales methods for fostering competition and that the BLM investigate methods for moderating large front-end bonuses through greater bonus payment deferrals. Investigation of intertract bidding should continue. BLM studies of guaranteed access should be monitored for positive recommendations.
2. The task force does not recommend release of the Department's discounted cash flow models to the public because it would encourage attempts to second-guess the minimum bid rather than conduct evaluations, a probable source of wasteful expense; it does recommend that the assumptions made in setting major model parameters; DOI approved parameters (e.g., discount rate and price); resource data; reserve data (MER preliminary determination); and preliminary minimum acceptable bids be released to the public.
3. Many of the conceptual problems with presale fair market value findings would be circumvented by the Department's using a system of sharing excess profits realized on Federal coal tracts. The task force

recommends that such a system be studied on a schedule compatible with possible implementation on the tracts leased in the Powder River-1982 coal lease sale, but should not interfere with the sale schedule there. The Department of Energy would be invited to participate in this study.

4. The task force recommends that the Office of Coal Leasing be made responsible for the implementation of the recommendations contained in this report.

Review and Modifications to Recommendations of Draft Fair Market Value Task Force

In the "Secretarial Issue Document for the Federal Coal Management Program" 14 interim recommendations were put forward and, on June 2, 1979, endorsed by the Secretary. These recommendations are set out below together with recommendations and brief descriptions of follow-on efforts by the Fair Market Value Task Force. An "*" is used to indicate those recommendations to which a substantive modification is presented.

1. To the extent possible and in a cost-effective fashion, develop a marketplace for Federal coal leases that attracts more than one bidder per tract. Competition is the surest way to capture producer rents (surplus profits). A rent capture policy without a competitive marketplace would likely conflict with other objectives of the program, namely resource conservation and meeting the requirements of the National Energy Plan. Concepts currently under study within the Department which would likely increase the extent of competition include intertract bidding, guaranteed legal access to lease tracts, and offering Federal coal tracts in units including adjoining non-Federal coal. The results of these studies should be closely watched and the necessary support provided to them.

Comment: The need to enhance competition for Federal coal tracts has continued to be a primary theme running throughout the fair market value study (see "Other Major Recommendation"). The task force specifically recommends that the Department carry out pre-sale unitization of tracts on a trial basis. The task force has also endorsed the intertract bid sales concept at its present level of development.

(The final report of the intertract bidding task force is due in the Spring of 1980.)

- 2.* Major efforts should be made to improve present methods for evaluating small tracts.

Comment: Options for improving small tract sales are presented earlier; generally, the task force concluded that detailed evaluations

of small tracts required an unwieldy number of assumptions, and, therefore, recommends a system of flat-rate regional minimum acceptable bid levels together with a continuing comparable sale study of the proper setting for these levels. The task force did develop specific recommendations for procedural improvement of individual small tract evaluations. These are reported in Section IV and should be followed for lease modifications and for other cases where individual small-tract evaluations are needed.

3. As part of the normal process for conducting sales, public comment should be solicited on the elements of the evaluation procedures which affect estimates of FMV. These comments should be considered prior to commencement of evaluations.

Comment: Recommendations on releasing information before sales for comment are presented earlier. Release of all data is recommended (see "Other Major Recommendations"). The task force notes that while the present regulations allow comments to be "considered prior to commencement of evaluations" it is not required and has not been the case in the program to date.

- 4.* A detailed study should be made, based on industry records, of the rate at which anticipated cash flows from mining should be discounted to present value together with a study of the conceptual relationships of the risk, inflation, financial, and real return components of discount rates.

Comment: Studies of the discount rate selection for use in discounted cash flow analyses are presented in the main part of the paper and the contractor study. Rather than the uncritical use of a set number, the task force recommends a procedure be adopted for updating discount rates on a periodic basis (see Section IV).

5. The CREV income approach lease value estimate should be supplemented with a documented comparable sales lease value estimate. In each case the usefulness of market data would be determined and documented on an appraisal-by-appraisal basis.

Comment: This recommendation still applies to large tract, individual appraisals. The task force also endorses continuing studies of comparable sales lease value estimates with annual reports to the Secretary for small tracts.

6. As a priority item, the uncertainties inherent in the government's income and market approaches to evaluation of FMV should be more rigorously investigated.

Comment: The task force prepared study papers on this topic (see Section V), but, while still endorsing the need for uncertainty studies, now would only note it is a subject that should be dealt with within the operating bureaus. The task force also noted in interviews with those having operational responsibility for coal tract evaluation that, in general, insufficient time was available for studies aimed at improvement or recalibration of existing methodology. Such studies would not only result in a more vital up-to-date evaluation program, but also are needed to maintain a sound professional staff.

- 7.* Inflation of coal prices and coal mining costs should be incorporated into the DCF approach to estimating FMV. Methods should be developed to account for the effects of inflation on the elements of the DCF model, particularly the effect on depreciation tax credits.

Comment: The contractor report on methods of correcting the depreciation element of an inflation-free discounted cash flow model to avoid underestimating capital recovery cash flows is appended to the main report for the use of the operational bureaus. The task force recommends the suggested procedural changes or similar changes be made into "inflation free" DCFs. The task force notes with interest that USGS is investigating possible DCFs "with inflation."

8. Potential double counting of royalties (calculating royalties on prices which already include royalties) should be recognized in estimating coal prices to be used in DCF estimates of FMV; this could occur when the sample of market prices includes prices which include royalty passthrough components. Methods should be developed for adjusting current coal prices for applicable royalty rate where coal contracts contain royalty passthrough provisions.

Comment: This problem is symptomatic of the difficulty of using the present survey technique to find coal prices. The task force conducted no further studies on this point because its major recommendation circumvents the problem; a report by the contractor, however, indicates that royalty passthrough provisions are very common in long-term contracts involving Federal coal. Generally, the task force was very sensitive to the role of the Federal government as a price leader in the western coal industry; accordingly, it recommended new procedures for finding the coal price used in cash flow analyses to avoid monopoly rates.

9. The FMV of the damages to a qualified surface owner should be based on market value of similar surface estates and damages in non-coal areas; use of market data from non-coal areas would eliminate the consideration of royalties to the surface owner as an element of FMV of damages and costs; this approach should be incorporated immediately into tract evaluation methodologies.

Comment: The FMV task force continues to support this recommendation. A study paper on this topic is included with the new report. This recommendation has not been implemented by the operating bureaus.

10. The appraisal of FMV of all competitive leases should be documented; such documentation should not reveal any proprietary data but, otherwise, should be detailed enough to allow reconfirmation of decisions and, further, should be placed in lease case files after leases are issued.

Comment: The FMV task force continues to support this recommendation.

11. The general practice on new leases of capturing FMV through increased royalties instead of increased bonuses should be discouraged; however, it might be retained for possible application to PRLAs and possibly to readjustments and emergency leases.

Comment: The FMV task force continues to support this recommendation. The task force has not dealt with readjustment or PRLA policy. The topic of evaluation for purpose of exchanges is also specifically excluded.

- 12.*Development guidelines should be developed for a possible bid-acceptance (reservation price) procedure similar to that used for OCS sales.

Comment: This procedural option was one of the principal options examined by the task force, but it is no longer recommended.

13. Industry and public participation information and views on the fair market value process should be sought and applied to the studies recommended above.

Comment: The task force has followed this instruction. The keystone to this effort was a major public meeting on fair market value November 1, 1979, in Denver. Industry and public views are represented throughout the report.

14. The Office of Coal Leasing, Planning and Coordination (LOC) should continue oversight responsibilities for the above studies.

Comment: The task force has noted two instances above where June policy decisions have not yet been implemented in the field. Washington offices should take specific follow-up steps to all the actions adopted herein. In general, it appears that communication of the details of decisions and the issuing of instructions to implement those decisions could be strengthened.

Section II

Background and History of Issue

Background

An understanding of fair market value and minimum acceptable bids requires a sound knowledge of coal markets, the economic theories of resource extraction, the legal setting, and the policy evolution and history of fair market value and resource evaluation issues within the Department. The purpose of this section is to give those readers without that knowledge sufficient background information to understand the context of the task force's recommendations. Readers seeking greater depth of coverage of these topics should study section V of this report, the previous reports of the Departmental coal evaluation task forces; the public comment received by the task force in Denver on November 1, 1979; and the reports submitted to the task force by the contractor who assisted the task force in the final stages of its work, ICF, Inc.

According to the Federal Coal Leasing Amendments Act (FCLAA) of 1976, Federal lands offered for coal leasing must be sold via competitive bidding and "No bid shall be accepted which is less than the fair market value, as determined by the Secretary [of the Interior], of the [in situ] coal subject to the lease". Thus, the receipt of fair market value is a legal requirement in Federal coal leasing. Unfortunately, confusion has arisen about the meaning of the term "fair market value". This is partly because of its use by various authors in the literature on mineral leasing to describe what price the government should seek to obtain as a leasing goal, rather than what price it must obtain as a minimum legal requirement. Receipt of fair market value is often confused with maximization of government income from sale of its resources. Fortunately, this confusion concerning the definition of fair market value does not extend into the legal arena. The courts have established the legal definition of fair market value within the body of law dealing with the purchase or sale of property and its appraisal and the condemnation of real property by the government under the power of eminent domain.

"Under established law, the criterion for just compensation is the fair market value of the property at the time of taking. 'Fair market value' is defined as the amount in cash, or in terms reasonably equivalent to cash, for which in all probability the property would be sold by a knowledgeable owner willing by not obligated to sell to a knowledgeable purchaser who desired but is not obligated to buy".

Thus, if there is an established market price for a property, then this is its fair market value. If there is no established market price for a property, then an appraiser's estimate of the market price is used instead. In the appropriation of private lands by the Federal Government, it is the government's appraisal of the market price that legally determines the fair market value. Moreover, the FCIAA of 1976 makes it clear that the determination of fair market value is the responsibility of the government in Federal coal leasing, as well, specifically identifying the Secretary of the Interior as the government agent responsible. Furthermore, the U.S. Department of the Interior's Departmental Manual presently states that the 1973 Uniform Appraisal Standards should be used "as a guide by all bureaus and offices" within the Department and that "the appraisal standards are equally applicable to those bureaus that dispose of property on behalf of the United States" (emphasis added). Thus, a definition of "fair market value" in Federal coal leasing as "the federally appraised market price of the in-situ coal offered for lease" is fully consistent with the current legal and Departmental usage of the term, and will be our accepted definition.

There are two principal appraisal approaches for evaluating the market price of coal properties. These are the comparable sales approach and the income or earnings approach. Of the two, the comparable sales approach is, where feasible, the preferred method.

In the comparable sales method, a study of "arms length transactions in lands in the vicinity of those taken at about the time of taking" are made. This method is greatly preferred because "it is the only approach to value that reflects the balance of supply and demand in the market place."

In the income or earnings approach, the worth of an investment-type property is estimated via a discounted cash flow (DCF) model of projected future net earnings. Note that this method goes not usually account for the uncertainty of the earnings ever occurring, which reduces the property's value. Federal coal leases are investments of the type that can be evaluated with this approach. In this case, the price of produced coal and the cost of production can be used in a discounted cash flow model to estimate the net present worth of the Federal coal lease. This is, in fact, the system presently in use by the Department; for reasons debated by representatives of USGS and BLM, comparable sales analysis has not been applied successfully to Federal coal lease evaluation.

Within the context of public takings, the fair market value of a property is not subject to control by the "seller," but is based on observations of previous similar transactions in the existing private market. However, within the context of Federal coal lease sales, the fair market value is subject to control by the seller, the Federal government. The government can design its coal lease market to reduce some of the anti-competitive distortions that exist in the private coal lease market to the point where prices generated in the Federal market may generally exceed those in the private market.

Economic Rent

"Economic rent," sometimes referred to as "producer surplus" or "excess profits," is a term that comes from classical economic market theory. In coal property evaluation, economic rent is the present value difference between the market price of the mined coal and the costs, including normal returns to capital, of producing the coal. It can also be thought of as the excess return to a factor of production beyond that needed to bring it into use. The importance of this concept is that under ideal market conditions with no uncertainty, the market price of a Federal coal lease would be equal to the economic rent. This is the value bidders should willingly offer for a lease.

There are various sources of "rents" and "excess profits" which could potentially be captured through bonuses and royalties.

- (1) Transition and monopoly rents (also called quasi-rents) caused by restricted federal offerings or rapid shifts in demand due to unforeseen changes in the energy sector. The Department should not artificially restrict supply, but to the extent that the first new sales will result in prices that are intermediate between present and long-term price levels, some portion of the excess profits would be captured under the present DCF evaluation procedures but not under the recommended procedures. Unfortunately, since the Government is potentially a price leader and because of the way appraisals work, tract values could get stuck at high levels.
- (2) Exhaustible resource rents. These resource rents are due to scarcity and would be available in a competitive market, unlike those above, and should go to the resource owner. They should be small for coal.
- (3) Location rents. Some coal is closer to existing rail lines and to points of end use and hence of more value because of its location.
- (4) Rents due to differences in quality of coal

- (5) Rents due to differences in cost of production between mines within the same market area.
- (6) Rents due to differences in cost of production within a mine. Where two or more seams of coal are extracted in one mining operation, it is likely that they have different costs of extraction. The most costly seam will have a cost less than or equal to its market value. Less costly seams in the same mine can produce substantial economic rents. The Secretary's decision on maximum economic recovery was essentially a decision not to capture these rents.

The rents captured by the Department under the recommended new system for large tracts are type (2), (4), and (5). Under the existing system the Department might capture type (1) rents as well. Location rents are generally not reflected in the present method of rent evaluation, but would be included to some extent under the recommended large-tract evaluation system.

A number of analysts have recommended that an ideal Federal mineral leasing system would maximize the economic rent of the mineral leases, and would capture this entire economic rent for the public. Maximization of the economic rent is argued to be in the interest of national economic efficiency. Capture of the entire economic rent is argued to be the natural goal of a proprietor seeking the highest possible price for the use of his land, and, some analysts argue, the Secretary should manage Federal coal lands as if he were a private proprietor.

The commonly cited recommendation that the government should seek to capture the entire economic rent should be qualified in the case of coal leasing. First, the Department has potential monopoly powers; it can control prices for leases by the rate at which it releases coal to the market. Clearly these powers should not be used to maximize rent. Stated differently the Department should only consider capture of true rents, not of quasi-rents. Another policy argument is based on classical economic theory, which suggests that economic rent is a surplus, whose capture would not affect output decisions or the selling price of the produced mineral. However, capture of the entire economic rent, where the rent is measured based on the price of coal seen in the market prior to the lease sale and might include market price power, removes the potential for Federal coal producers to underprice their competitors as a market-entering strategy. In other words, where rents exist in a system for the producer, there is an opportunity for prices to go down. Where there are no rents for the producer, this opportunity exists only to those willing to accept less than normal rates of return. So in a dynamic sense, rent capture by the government can cause prices to become stuck at high levels.

Recapping, then, in Federal coal leasing, fair market value refers to the federally appraised market price of the unmined coal offered for lease, and represents the lower bound on the minimum acceptable bid the government can legally accept in exchange for its property. The maximum the minimum acceptable bid can be set for is the coal's economic rent. It is defined as the present value difference between the market price of the mined coal and the cost of producing the coal. Under an ideal market it would not include monopoly price efforts. The price a willing buyer should offer for a Federal coal lease would be equal to the economic rent, though he will certainly attempt to buy for less through the use of his bargaining power.

Several of the assumptions behind the above simple economic model do not hold in the real world. Inevitable non-ideal market conditions due to uncertainty will cause the actual market price of a Federal coal lease to equal, on the average, the expected present value economic rent, i.e., the rent with odds of successfully marketing the coal factored in, less the bid preparation costs expended to win the lease. Because this represents the highest price at which a Federal lease would still be favored over alternative private investments, it is the true upper bound on the amount the government can endeavor to receive through the minimum acceptable bid for its leases. Also, bidder should recapture their bid preparation cost for all sales through those sales in which they are successful.

Another difficulty in using the model uncritically is that it assumes a larger number of bidders. Although there are numerous potential bidders for each Federal coal lease, in most cases there is only one actual potential bidder. This is particularly true of the smaller tracts. The scattered or checkerboard pattern of coal (and surface) ownership in parts of the West, in combination with the large coal deposit size needed to achieve coal production scale economies, often causes Federal coal to be of value only to one potential bidder the owner of the contiguous coal deposit. Potential solutions to this problem include presale unitization, i.e., the selling of the Federal coal along with nearby private coal in units large enough to achieve coal production cost efficiency; and intertract bidding, wherein the high bidder wins the right to produce his most favored lease of those offered by the government. Other possible government actions that would tend to create a competitive environment by increasing and equalizing lease value among potential include: requiring transferable surface owner consent; guaranteeing access rights roads, etc.; and governmental brokerage of coal contracts to reduce price and contract uncertainty.

Besides the legal requirement that fair market value must be received, there are several Federal leasing goals which may be relevant to Federal coal lease pricing policy, including: promotion of national economic efficiency in the development of the resource; an equitable sharing of the rent from production of a lease between the public and producers; environmental protection; socioeconomic responsibility; and national security (national energy supply) considerations.

Thus, while it has been suggested that it would be in the interests of economic efficiency and equity to pursue as leasing policies the maximization of competitive-price lease rents and the capture of these rents by the Federal Government, for Federal coal leasing, the force of competing policy goals requires the rent capture goal to be modified to exclude rent-capture methods that would increase the price of produced coal or cause that price and thus the supply to become established at monopolistic levels.

Key Issue In Federal Coal Lease-Pricing Policy

This section distills the key findings on which the policy recommendations of the task force are based. The most important of these is that there appears to be a significant difference between the current long-term-contract price for mined coal and the estimated price at which coal on the best Federal coal lands, which are soon to be made available to the market, could be produced. This appears to be true even in the face of a still significant amount of leased, but not producing Federal coal (see Table 1). These existing leases do appear to be coming into production rapidly. As Federal coal leases become available in increasing number,

Table 1
Status of Leased Coal, 12/4/79

	Number of Tracts	S. Res	U. Res	Number of tracts Oil Cos Ownership ^a	
Leases in Prod.	177	3.17 (27.8)	1.09 (21.2)	51	29%
Leases with approved plans, no prod.	44	.49 (4.3)	.24 (4.7)	16	36%
Leases with mine plans submitted, not approved	72	3.09 (27.1)	1.17 (22.7)	48	67%
Leases without mine plans	245	4.65 (40.8)	2.65 (51.5)	87	29%
Total	538	11.40	5.15	202	(39%)
Grand Total		16.55			

Notes:

1. () indicates percent of total.
2. Total oil cos reserve lease holdings = 10.34 billion ton (62%).
3. The Department now has clear production indications on 59.2% of surface coal and 48.5% of underground coal. There were 223 leases in mine plans or with pending mine plans at the time of the Federal coal management program Final EIS (April 1979), that number has increased to 293 in the intervening period.

the selling price of mined coal should drop as competition for coal production contracts drives higher cost coal from the market. Ultimately, because of the vast supply of low cost Federal coal, the contracted coal price should again approach, as has been historically the case, the unit cost of production plus a minimal, competitively-determined rate of return on capital invested in coal production, with relatively small excess profits (rents) in the system.* The key issue facing the Department is what Federal coal leasing-pricing policy would be best to follow during this period of predicted decreasing real contracted coal prices during which transition and monopoly rents may possibly exist on Federal coal leases.

It is generally accepted Department policy to lease too much rather than too little facing an uncertain future, the task force in its recommendations has followed the analogous rule for minimum acceptable bids for the following reasons:

- Regardless of the degree of excellence of the government's discounted cash flow coal lease rent-evaluation model, the correctness of the government's estimates of lease rents will be, at best, uncertain. This is because the size of the rents is very sensitive to the f.o.b. price resulting from the lease sale — and this price is very uncertain. Also, in computing rent you are finding a small difference between two large numbers which magnifies the effect of uncertainty. Unfortunately, satisfactory f.o.b. price-prediction models do not exist and are unlikely to be developable since the instability of the estimate is inherent in the problem structure. Because of this, the government's estimates of lease rents could conceivably be off by order of magnitude with only slight changes in input. There have been recent instances of nearly side-by-side estimates only a few months apart that produced royalties in one case of 21% and in the other of the statutory minimum.
- Further, it is likely that any high lease prices used would, rather than resulting in sale failures, pass through to the consumer. Also, whatever reservation prices are set will always appear to be correct. The degree of error in the government's estimates of lease rents used to set the reservation prices will not be revealed because bidders will tend to pay whatever reservation prices are set. This is because of the control the Federal government has over a major part of the supply of the best western coal. As long as the reservation price is less than the difference between production cost plus a minimal return on investment and the negotiated contract price, it can be paid and the resource produced profitably. However, the f.o.b. price of such coal must be accordingly higher than it would be with lower reservation prices, a price that will eventually show up in consumer's electric bills.

*Electric Power Research Institute Report EA-497, "Coal Price Formation", December 1977.

- Once high reservation prices and royalties are used, they may be locked into the system for an indefinitely long period, effectively halting movement towards the equilibrium coal price. Also, once obtained, high reservation prices could set a precedent for fair market value determinations based on comparable sales in future Federal and non-Federal coal lease sales.
- In theory at least, social welfare maximization occurs at the point of competitive equilibrium of national coal supply and demand. At this point, the greatest amount of coal will be produced at the lowest possible cost and the contract price for coal will equal its production cost plus a minimal, competitively-determined rate of return on the capital invested in coal production. For large tract evaluation the task force has recommended use of this price rather than the estimate of current coal price.
- The task force recommendations generally puts the Department in the position of relying more on the market to set the value of the Federal tract and include steps to enhance competition in lease sales.

The basic weakness of the traditional royalty and reservation price set on the basis of existing prices of the time of evaluation is that it assumes that the price of the produced mineral is insensitive to the manner in which it is leased in-situ by the government. While this is a reasonable assumption for the leasing of Federal oil and gas properties, it appears to be inappropriate for the leasing of Federal coal properties. The rate of offering and method of pricing of Federal in-situ coal will have a dramatic effect on coal prices. Acknowledgment of the dynamic, interactive nature of Federal coal lease-pricing methods and coal prices is essential to recognition of a superior Federal coal lease-pricing policy.

The Federal government should rapidly offer Federal coal tracts in each region to clear the regional markets of higher cost non-Federal coal. The goal is to generate quickly postsale markets wherein coal prices would be determined based on the extraction costs of the new low-cost Federal coal with all rents squeezed into lower prices. The Federal government should work to ensure that coal from Federal leases is contracted to be sold at cost plus only a reasonable return on investment. One policy tool for such action is that the Federal government can require in its leases that produced coal be sold at "reasonable", i.e., presumably not exorbitant, prices. Due caution is advised here, though. It is best to rely on a competitive postsale market to determine what is a "reasonable" price or a reasonable return on investment. Increased direct purchase and production of Federal coal leases by utilities is always an available option. We should expect that these factors will work to very quickly pull coal prices in line with the lower production costs on new Federal coal.

If the coal price is not expected to drop immediately to a cost-based equilibrium, by not utilizing reservation prices in an attempt to capture directly the monopoly and transition rents which would temporarily exist, the Federal government would obtain several benefits beyond that of allowing for further unrestricted downward movement of the coal price. First, the administrative cost of detailed tract evaluations would be saved, which is one of the main reasons for the task force's flat-rate system recommendation for small low-value tracts. Second, approximately half of any excess profits that result, including excess profits on private coal developed in conjunction with the leased Federal coal, will be captured via Federal corporate income taxes. (The task force also recommends investigation of a profit sharing system.) Third, several beneficial types of industry behavior may result. Firms are encouraged to buy Federal coal leases in order to capture these rents, which would tend to raise the level of competition and the bid levels for offered Federal coal tracts. Also, the temporary existence of monopoly and transition rents should induce a greater number of outside firms to enter the coal industry, strengthening its general competitiveness and resulting eventually in a lower competitively-determined "normal" rate of return on investment in the industry and lower prices to consumers than would occur in a less well-realized competitive market equilibrium.

Based on these observations and consideration of what policy on minimum acceptable bids would allow for unrestricted movement of the coal price towards its competitive equilibrium-determined minimum while ensuring the government a large share of the residual rents in the system leads to the policy suggestions contained herein.

History

The history of fair market value and economic evaluation of Federal coal resources for lease sales is based on a series of laws, judicial decisions, policy statements, documented procedures, and task force reports.

The need for pre-lease economic evaluation of coal leases has its basis in the Mineral Leasing Act of 1920, which changed the procedure for acquisition of coal mineral rights from outright sales to leases. Early efforts to insure reasonable value for sale of coal looked to the Federal Property and Administrative Services Act of 1949, whereby coal, in lands reported as surplus according to 30 U.S.C. 352, was disposed of by the General Services Administration. This act authorizes disposal of surplus property by sale, exchange, lease, permit or transfer for cash, credit or other property on such terms as the Administrator of the GSA deems proper. These terms specify advertisement for bids in such a manner as shall permit full and free competition consistent with the value and nature of the property involved. Exceptions to these terms include national emergency, public health and safety, uncompetitive bidding and situations in which fair market value can be secured through negotiations.

Also 31 U.S.C., promulgated in 1951, provides (483):

"It is the sense of the Congress that any work, service, publication, report, document, benefit, privilege, authority, use, franchise, license, permit, certificate, registration or similar thing of value or utility performed, furnished, provided, granted, prepared, or issued by any Federal agency *** shall be self-sustaining to the full extent possible, and the head of each Federal agency is authorized by regulation ** * to prescribe therefor such fee, change, or price, if any, as he shall determine, in the case none exists, or redetermine, in the case of an existing one, to be fair and equitable taking into consideration direct and indirect cost to the Government, value to the recipient, public policy or interest served and other pertinent facts;..."

In September 1959, the Bureau of the Budget (now OMB), in Circular No. A-25, stated that fair market value should be obtained where federally owned resources are leased or sold.

Coal leasing during the period of 1955 to 1970 was accomplished on a reactive basis, case-by-case, without any consideration for the total coal reserves under lease or the need for additional leasing, and the environmental impacts of leases were not addressed. Prevalent feeling was that the bonus bid was a token payment and that true market value was actually realized by royalty payments. Bonus payments on the order of \$1.00 to \$10.00 an acre were common and were believed to be all the traffic would bear. Estimates were subjective, based on comparison with other sales and the experience of Area Mining Supervisors, USGS.

At the opening of the 1970 decade, some lease sales in Wyoming coal fields experienced rather large increases in bonus bids. The Secretariat issued guidance to the Survey to make adjustments to bonus bid evaluations. In response, the Conservation Division developed the K-factor formula, which is a simple empirical method of assessing historical sales to arrive at a pre-sale estimate of coal resource value. It fell into disrepute because the value in the equation became outdated and because it was seen as relying too much on arbitrary judgements in setting "K".

In October, 1972, Secretarial Order No. 2948 entitled, Division of Responsibility Between the Bureau of Land Management and the Geological Survey for Administration of the Mineral Leasing Laws-Onshore" was issued. Among its stated purposes was that fair market value be received for leased mineral resources in addition to other provisions, of which two are pertinent:

Section 3(c), quoted below, was the authority for tract resource evaluation-rules for competitive lease sales.

"Competitive Lease Sales. The Bureau of Land Management advertises and conducts competitive lease sales. The Geological Survey's resource evaluations will be used and the Geological Survey will have representatives at the sale and renders a post-sale recommendation to BLM regarding acceptance or rejection of the bids, which must be confirmed in writing."

Section 4 also delegated responsibility to make evaluation reports for purposes other than competitive lease sales, e.g., exchanges.

"Mineral Reports. The Geological Survey is responsible for preparing and submitting to the Bureau of Land Management mineral classification and evaluation reports with respect to the leasable mineral value of lands within proposed exchanges, withdrawals, sales, land entries, or other disposals and all other land transactions. The Geological Survey, upon request, also prepares and furnishes mineral reports and other information to the Bureau of Land Management needed for its use in long-range multiple-use planning or inventory of the public lands."

In 1970 a report from BLM entitled "Holdings and Development of Federal Coal Leases" showed that, while coal leasing had increased about tenfold since 1945, production had dropped 2.5 million tons per year. A coal leasing moratorium was effected by the Secretary in 1971. This action was followed by a moratorium on coal prospecting permits in 1973. In an official news release announcing a new coal leasing program on February 17, 1973, the Secretary of the Interior stated one of the goals would be a fair market value return for resources sold. Continuing through 1976 a few coal leases were issued.

Development of coal resource economic evaluation procedures now employed by the Geological Survey began in late 1975 in response to criticism directed at the then existing evaluation procedures. This newer method is based on an income approach utilizing discounted cash flow (DCF) procedures, and includes the use of comparable sales.

The development efforts were carried out by two task forces within the Conservation Division, USGS. The first task force defined the scope of work, and the second task force developed and documented the operational procedures, including data sources, costing methodology, and a computerized discounted cash flow program, which was completed in December, 1976.

During development of the procedures, two proposed competitive coal tracts were evaluated and some preference right lease applications were assessed using the partially documented procedures. Both competitive tracts were made available for sale. A Freedom of Information Act request for release of the resource estimates and value data on the first proposed lease sale was made by Mr. Frank Pitman, an industry news reporter; the request

was declined by the Conservation Division. This action was followed by an unsuccessful appeal to the Department which was later remanded to the courts. The Judicial decision of the court decreed that tract economic data could be withheld until a decision to award the lease or not to lease the tract was made.

During 1976, the Conservation Division authorized personnel and budget for the establishment of an Economic Evaluation Unit, as part of the Manager's Staff, Central Region, Conservation Division.

Economic evaluation is structured as a three level function: 1) resource determination by the appropriate Area Geologist; 2) mining method and mine design by the appropriate Area Mining Supervisor and 3) costing and economic evaluation including tract value determination by the Economic Evaluation Unit. The tract results are assessed by a 3 member committee that determines the values to be forwarded as a GS recommendation to the State Director, BLM, for his use in arriving at fair market value. While the State Director theoretically has discretion as to the use of the GS derived values in determining fair market value, there are no recorded cases where the final decisions were not based on the GS values as received. Recently, the Conservation Division has moved to initiate two more evaluation offices in the west.

Coal commodity prices and the discount factors were recognized early as critical components of the coal resource economic evaluation. Accordingly there was much discussion within the Geological Survey and between the Survey and the Department on the rationale and procedures for deriving these values. The prescribed solution to date has been the assignment of a specialist in the Economic Evaluation Unit to estimate coal commodity prices for each lease sale. Discount factors have been based on values prescribed in a 1977 memorandum from the Staff of the Director, USGS, which in turn reflects policy established by the Office of Management and Budget.

The Department's coal leasing program was stopped by a challenge of the programmatic environmental statement in the NRDC vs. Hughes suit filed in U.S. District Court on October 21, 1975. On June 14, 1978, a partial settlement of the suit was approved. Specifically,

The agreement embodied in the amended order permits leasing under any of five standards: by-pass leases, employment leases, ERDA project leases, lease exchanges, and seven specified hardship leases. The agreement allows the processing but not issuance of the 20 noncompetitive (preference right) lease applications having the least environmental impact. Finally, the Department was permitted to process, but not issue, a lease based on an application by the Edison Development Corporation.

The conditions imposed on the tracts evaluated to this point have specified that the leases would be granted to applicants (i.e., operators) on a hardship basis with existing properties whose reserves were inadequate to meet contractual commitments. The implication of this decision was that the quantity of reserves did not necessarily reflect good coal resource management techniques and were marginally adequate to support a mine.

In a two-year period (1976-1977), the statutory base for the management of Federal coal was greatly expanded by enactment of: the Federal Coal Leasing Amendments Act of 1976, the Federal Land Policy and Management Act of 1976, the Surface Mining Control and Reclamation Act of 1977, the Department of Energy Organization Act of 1977, and the 1977 Clean Air Act Amendments.

The Federal Coal Leasing Amendments Act of 1976 (FCLAA) provides for public input on fair market value and specifically mandates that:

"No bid shall be accepted which is less than the fair market value, as determined by the Secretary, of the coal subject to the lease."

Efforts to assess the procedures, statutes, judicial decrees, policy statements and reactions by the public and lessees have resulted in the formation of three Task Forces over the past two years.

The first Task Force consisted of U.S. Geological Survey and Bureau of Land Management personnel; it resulted in the report "Tract Evaluation Task #155 Issue Paper" May 1978. In an effort to address unresolved issues a second Task Force composed of DOI, DOE, GS, and BLM personnel was established which resulted in the report "Fair Market Value of Federal Coal Concepts and Procedures" in April 1979. The substance of this report was included in the Secretarial Issue Document released in 1979 as a section entitled "Summary and Recommendation of Draft Fair Market Value Task Force Report", which consisted of 14 recommendations to further study and possible changes in procedures. The need to resolve these issues resulted in instruction from the Under Secretary on June 25, 1979, to form a new study group. This third Task Force, composed of GS, BLM, DOI and DOE personnel, assisted by outside consultants has provided issue papers, briefing papers and held a public meeting. The purpose of the meeting, held in Denver, November, 1979, was to present the evaluation issues to the public and obtain their input. These background papers and briefing papers have been submitted to the appropriate Department Bureaus and Offices for their comments.

SECTION III: MAJOR PROCEDURAL OPTIONS CONSIDERED BY TASK FORCE

The major procedural approaches to determining minimum acceptable bid considered by the task force are summarized in this section. These options are:

1. Modification of present system to enhance appraisal aspects of evaluation and modification of discounted cash flow (DCF) procedures to match appraisal concepts.
2. Use of a procedure of averaging of the pre-sale estimate of value with bids received so that more weight is given to bidder's evaluation of the tract.
3. Use of a flat-rate minimum acceptable bid with appropriate stratification.
4. Use of a reservation price that reflects regional ranking by reducing DCF economic rent estimate (more desirable tracts from environment and social viewpoint would be lower priced and uncertainty would be taken into account).
5. Use of conservative DCF calculations that exclude quasi-rents which may appear to exist only because of temporarily-constrained Federal coal supplies within a region.
6. Use of a mix of options 3 and 5 for small and large tracts.

Additional analysis and background is provided in the references cited. Note that the task force did not consider the status quo an acceptable option at the time these major procedural options were drafted.

FAIR MARKET VALUE BRIEFING PAPER: Option 1

Question: Should the minimum acceptable bid for Federal coal leases be established through enhanced use of appraisal techniques for determining fair market value and modification of DCF procedures to match appraisal concepts?

Background: The laws and regulations authorizing and governing sales of Federal coal leases provide that such leases shall not be sold at less than fair market value. Fair market value is an appraisal term. There are numerous public land laws and other Federal statutes governing sales of public lands or resources and government property, and acquisitions of private lands or interests in private lands which serve as precedents for prescribing a logical method of establishing minimum acceptable bid. These laws provide that the sale price (direct or non-competitive sales); minimum acceptable bid (competitive sale); offering price or purchase price (negotiated acquisitions); or deposits with Courts (declarations of taking in condemnation actions) shall be the fair market value as estimated by appraisal. Minimum acceptable bid can be set higher than fair market value; however, under this option they would not be. Presently, comparable sales analyses and discounted cash flows are performed by personnel without training in appraisal concepts. The DCF evaluation of tract through value-in-use violates appraisal standards. Comparable sales have rarely been applied under the existing system, perhaps because of inexperience in this area on the part of those responsible.

Analysis: Establishing the minimum acceptable bid in this manner:

- A. Eliminates the need to have a pre-sale or post-sale panel go through any additional manipulation process to determine which bids should be accepted.
- B. Add credibility to the sale process by following accepted appraisal procedures recognized by industry and courts.

Comparability of Federal with private coal sales can, however, be challenged generally on grounds of differences in the quality of information available to the seller and perceived differences in administrative burden. Field tests failed to demonstrate workability of comparable sales approach. Because of Federal price leadership position in western coal States, circular appraisal reasoning, where new appraisals are merely reconfirming old appraisals, is a problem.

References:

1. "Process of Establishing Minimum Acceptable Bids on Federal Coal Leases," Nov. 1979, C. E. Brownell, BLM/DFC

2. "Dry Run of Comparable Lease Approach to Estimating Fair Market Value of Federal Coal," Nov. 1979, C. E. Brownell, BLM/DFC
3. "Comparable Lease Approach to Estimating Fair Market Value of Federal Leases," Nov. 1979, C. E. Brownell
4. "Uniform Appraisal Standards for Federal Land Acquisitions," Interagency Land Acquisition Conference, 1973.

FAIR MARKET VALUE BRIEFING PAPER: Option 2

Question: Should a procedure of averaging the pre-sale estimate of value with bids received be adopted for setting minimum acceptable bid levels?

Background: Bid averaging would be a step towards greater reliance on the auction, itself, to set the tract reservation price. Arguably, the market provided by the auction is the best source of fair market value information. One of the steps taken by the FMV task force to identify new approaches to fair market value determination was to seek advice from a panel of five outside experts. From these five experts one, James B. Ramsey, Chairman of the NYU Department of Economics, offered a suggested new procedure. Ramsey, whose views seemed to be generally shared by the other panel members, argued strongly that the Department, because of its assumption that coal auctions would not be competitive, was trying to second-guess the "fair" market price through its discounted cash flow evaluations. It would, however, never really do well in such efforts because government project evaluators do not face the same behavioral rewards and penalties as those persons preparing coal company bids and risking coal company investments. Further, the Department gets its information on the market (prices realizable) indirectly, rather than directly through face-to-face contract negotiations. (The same can be said of estimates of rates of return).

Rather than sophisticated but "probably unworkable" analyses aimed at deriving a minimum acceptable bid, Ramsey suggested that the Department offer coal leases with minimum acceptable bids set at minimum mandated levels (somewhat as is suggested in the flat rate minimum option following).

He did not, however, think the Department should rely entirely on a competitive market developing that would bring the public the proper return for its coal. He suggested instead that the Department use the simple device of declining to consummate lease sales at auctions where fewer than, say, five bids are received.

Analysis: Setting FMV policy without testing Ramsey's forecast that more competitors will show up for Federal coal lease sales than the Department has assumed is clearly risky at this time. If future experience shows that sales with only one or two bidders participating are rare, Ramsey's suggestion might then be reconsidered. As a compromise, the task force considered as an option setting minimum acceptable bid based on an average of the pre-sale estimate of value as estimated by other recommendations herein, and coal bids received on the tract. Thus, as more bids are received the government's reliance on its pre-sale evaluation would decline. A similar approach has been used successfully on the Department's OCS sales. As is done for OCS, the Department would average to find

the minimum acceptable bid if three or more independent sealed bids were received; if one or two bids were received the Department would decline to use the averaging criteria. This option is compatible with pre-sale evaluations from the options for a modified-present-system approach with enhanced appraised efforts, a reservation price approach, and the revised DCF coal price approach. It is incompatible with the flat rate minimum proposal or intertract bidding systems. The major advantage of this option is that it gives the Department flexibility to rely on market information received at the sale. The more information received, the more weight it is given, vis-a-vis the pre-sale estimate. Among its disadvantages are that it may provide some incentive for collusion among bidders and that it might result in some delay in announcement of winners and, thus, tie up funds that would be used in bidding for other tracts. Also, it could be seen by some as finagling with the bid acceptance rule by the government to get a sale after the fact. The average number of bidders on coal lease sales between 1965 and 1975 was 1.9. Averaging to find the minimum acceptable bid, to some extent, represents a halfway position between attempting to capture DCF estimated full rent (status quo) and the flat-rate, minimum level proposal.

References:

1. "Observations on Fair Market Value," ICF, Inc., Report presented to the Fair Market Value Task Force, Department of the Interior, December 1979.
2. "Proceedings of the Town Meeting on Fair Market Value of Federal Coal Leases," Department of the Interior, November 1, 1979.

FAIR MARKET BRIEFING PAPER: Option 3

Question: Should pre-sale minimum acceptable bid values of coal leases be standardized with appropriate stratification, e.g., by coal supply regions, coal fields, or coal type?

Background: Leases in areas containing coal of comparable quality, with similar mining methods and equivalent access to markets tend to have the same per-unit value. Private leases examined by task force members indicate this value is lower than the Congressionally established minimum in many cases. Under this option pre-established fixed tract values would be applied to the regional production regions according to a schedule that was periodically readjusted. The only purpose of this schedule would be to ensure the Department's receiving fair market value. Maximization of income by setting higher minimum acceptable bids would be abandoned by the Department. Additional stratification of coal prices by coal fields, coal tract size, etc., would be used as needed. Periodic determination of the level of interregional tract fair market values by broad comparable sales analyses would provide the basis for the minimum acceptable bids for the tracts offered. There would be no case-by-case evaluation needed other than determination of coal reserves and type. The Department would put its reliance on sale competition to capture high rents. The difference in tract values within a region (intra-regional rents) could also be captured using a profit sharing system if they were not captured at the sale because of low bidder interest. Each area would be continually re-evaluated on a set schedule so that the fair market values would be current and the Secretary could be assured of meeting the statutory mandate. These studies would result in annual reports to the Secretary.

Analysis Overview: An areal basis for determining in situ values is consistent with the comparable sales approach. It avoids any reliance on discounted cash flow analyses, which appear to be extremely sensitive to input parameter estimates. This option would reduce tract uncertainty of sale and possibly enhance competition among potential bidders. Enhanced competition would result in higher bids.

1/ Towle, C. L. "Proposal for a Flat-Rate Minimum Acceptable Bid," November 1979.

2/ "Observations on Fair Market Value" (draft), ICF Inc., November 1979.

3/ "Analyzing Profit-Share Leasing," Resource Planning Assoc., Inc., Washington, D.C., August 7, 1979.

This option should assure that the tracts with the lowest resource extraction costs will attract the most bidder attention since they will have all their rents potentially available to the winning bidder. The possibility of a no-sale result on the best tracts would be less than it is under any other option here since all the other options take at least some of the stakes off the table before the sale. The tracts that are not as good as the others being offered would have a correspondingly greater chance of not selling. This option would work quite well with an intertract sales system.

This option acknowledges risk and uncertainty in coal development and production and the uncertainty of the government's estimate of value, a central theme of industry comment to the task force. Marketing and development uncertainty as well as uncertainty about input parameters to which the DCF result is very sensitive, pose, some would say, insurmountable difficulties in determining coal resource values a priori. They are not explicitly accounted for under the status quo.

If a large number of tracts are offered by the Department, with or without intertract bidding, this approach makes it feasible to evaluate them, since the economic evaluation work is much less time consuming. The government would avoid costly evaluations on tracts where there is little chance that its income increment received because of the evaluation would repay their administrative costs. The government would not be required to collect financial information on the myriad of factors that must be considered to fully evaluate a tract. Since evaluation work is essentially independent of the number or size of the tracts, the budget and personnel for economic evaluation are minimal. The task force recommended the Department adopt this option for use on "small" tracts with later addition of profit-sharing if further study shows it to be feasible (see Section I).

References:

1. "Fair Market Value, Economic Rent, and Federal Coal Leasing," D. Bieniewicz, Section V herein.
2. "Notes for a Proposal for a Flat-rate Minimum Acceptable Bid," C. Towle, (Section V herein).

FAIR MARKET VALUE (FMV) BRIEFING PAPER (Reservation Price): Option 4

Question: Should a reservation price system be used that is based on modification of economic rent estimate to account for uncertainty, socio-economic factors, etc?

Background: Under Secretarial Order 2948, the Geological Survey (GS) has the responsibility to make an estimate of the economic rent. This value is then used by the Bureau of Land Management (BLM) to assure receipt of FMV. Currently, the GS makes its estimate using a computer DCF model, the coal resource economic value (CREV). Under current short-term leasing criteria (STLC) sales, BLM generally accepts the value generated by the CREV as the minimum acceptable value (reservation price) in assuring receipt of FMV. If a bidder makes a bid at or above the reservation price under that consideration, FMV is achieved and the lease issued. This method does not recognize that various socio-economic factors (impact on local economy, and relocation of jobs, etc.) that may require taking some price less than an economic rent as a preferable choice nor does it recognize uncertainties in the process of going from lease to operating mine.

Analysis: The question that would be resolved is what, if any, modification must be made to our current procedures aimed at obtaining FMV to accomplish a fair and equitable exchange of monies for resources under the up and coming coal leasing sales. The answer to this problem is dependent on what the Department determines is fair and equitable (i.e., the best thing to do). Two extremes can define the boundaries of an infinite number of scenarios to what is fair and equitable as applied to coal FMV. The one boundary scenario would achieve the extreme of getting coal into the market place at the lowest possible price, thus resulting in a lowering of cost to the American public of coal-generated energy; however, a lesser return in revenue (via bonus) to the Government would be realized (Option 3). The other boundary scenario would achieve the highest return of revenue to the Government for the coal and also result in probably the highest cost to the American public for coal-generated energy (status quo and slow rates of leasing). The question is which boundary scenario or intermediate scenario does the Department consider fair and equitable. Methodology and procedures for determining the reservation price to achieve that fair and equitable transaction is not difficult, but a policy decision as to how much less than economic rent the Department considers fair and equitable is necessary. (See statement of goals in Section I.)

Once a decision is made on the scenario option desired, the Government would become an active player in determining FMV. Reservation price would be set for each tract to be offered based on the selected option and its inherent reduction factor (IRF) (how much less than economic

rent the Department is willing to accept due to its estimates of uncertainty), the socio-economic rank of the tract to be offered, and the estimated economic rent.

The functional form of the reservation price would be KG , where G is the Government's rent estimate and K , ranging $0 < K < 1$, is a multiplier which is dependent on: (1) the desirability of leasing a particular tract over other tracts due to socio-economic impacts (from the regional coal team); (2) the desirability of leasing versus not leasing coal to meet regional production goals; (3) the IRF; (4) the discounted value of losses due to bid rejection; and (5) any additional considerations that may be warranted.

Let us examine how K would depend on these factors. For example, as the number of bidders (i.e., the evidenced competition) went up, more dependence could be placed on the market to force the rent to be bid away, and less dependence would need to be placed on the Government's rent estimate (G). Thus, as the number of bids increases, the multiplier (K) should decrease.

In another example, as the uncertainty in G increases (as measured by its variance, where G is a point estimate of the rent such as the mean), then the chance that the Government has made a wrong estimate of actual rent increases. Thus, as the variance of G increases, to reduce the risk of inappropriate bid rejection, the multiplier (K) should decrease.

In addition, the relationship between bid value and downstream Government revenues should also be considered in setting K . For example, where bids are tax deductible, if a bid is strategically decreased by the bidder, then the tax deduction is reduced also, so that the Government will gain greater tax revenues from leasing the property. Thus, K could be set somewhat lower compared to the case where bids are not tax deductible.

An example of how the reservation price could be determined is indicated below:

1. Calculate a DCF value for each sale tract.
2. Calculate rejection coal economic value (RCEV).
 - a. FV (bonus): Calculate the loss in present value of the DCF as a bonus if tract leasing were delayed until the next sale.
 - b. FV (royalty): Calculate the loss in present value of the royalty cash flow stream if its start is delayed until after the next sale.

c. RCEV: (DCF value) - ΔPV (bonus) + ΔPV (royalty)].

3. For each tract:

- a. Production ranking factor (PRF): Divide fifth-year production goal (PG5) into fifth-year tract production (Pt), normalize, and multiply the normalized value by the IRF, i.e.:

$$PRF = \frac{(IRF) \left(\frac{P5}{PG5} \right)}{\left(\frac{P5}{PG5} \right)}$$

- b. Payroll ranking factor (PAFR): Divide fifth-year tract payroll (PRS) by the current total payroll (ΣPRO) for the same geographic area included in the institutional ranking factor, normalize, and multiply the normalized value by IRF, i.e.:

$$PARF = \frac{(IRF) \left(\frac{PRS}{\Sigma PRO} \right)}{\left(\frac{PRS}{\Sigma PRO} \right)}$$

- c. Cash impact factor (CIF): Sum the fifth-year net dollar impact on county government, city government, and local schools for each tract, rescale, normalize, and multiply the normalized value by IRF, i.e.:

$$CIF = \frac{(IRF) (Gi + GI \min)}{\Sigma (Gi + GI \min)}$$

4. Calculate MAB:

Reservation price = RCEV - (PRF + PARF + CIF) RCEV

Reservation price = MAB = RCEV (1 - PRF - PARF - CIF)

Where: (1 - PRF - PARF - CIF) = K and RCEV = G so the functional formula is once again reservation price = KG.

The difficulty with this process is that the setting of the reduction factor is highly arbitrary and possibly subject to discretionary abuse. If operated properly the system would be internally consistent, but there is little basis for saying what factors should go into the reduction constant or for establishing the initial values on the uncertainty levels involved.

FAIR MARKET VALUE BRIEFING PAPER: Option 5

Question: How should the DCF be used to determine reservation prices if tract-specific rather than flat-rate reservation prices are utilized? Specifically, should the government's DCF calculations exclude quasi-rents which may appear to exist only because of temporarily-constrained Federal coal supplies within a region?

Recommended Policy: Tract-specific reservation prices should be set equal to the calculated expected present value economic rent using conservative assumptions on coal price and other DCF model inputs as described in the analysis. Specifically, a "competitive" coal price should be assumed in order to calculate properly lease rents free of quasi-rents.

Analysis: Theory suggests that a proper reservation price should be less than the estimated expected present value economic rent. We were able to identify numerous factors supporting this qualitative assessment* and several policy tools by which such an adjustment could be made. However, the degree of adjustment necessary is unknown based on existing data. The most reasonable alternative to discarding the tract-specific reservation price approach is to set such reservation prices based upon highly conservative assumptions for the calculation of lease rents, i.e., low f.o.b. price**, high production costs, and high discount rate.

A suggested approach for estimating a conservative f.o.b. price will be presented subsequently. Based on available coal production cost data, a "high production costs" standard is readily developable. A conservative discount rate would be one based on the higher rates of return commonly utilized in coal project planning which include some additional risk elements rather than on the average rate of return evidenced on completed coal-production projects or on the weighted average cost of capital to the coal industry.

The proper price to use in estimating the economic rent of Federal coal leases is the price at which the coal will be sold f.o.b. under long-term contracts to utilities (the most likely use of western coal will be in coal-fired electricity-generating power plants). Once firms obtain their Federal coal leases, they will have to compete with other lessees and existing coal owners in the region to obtain such coal production contracts. The f.o.b. price at which they will be able to sell their coal depends on the degree of competition for coal production contracts that exists after Federal coal lease sales in the region. Before

* See "Fair Market Value, Economic Rent and Federal Coal Leasing," Donald J. Bieniewicz, October 17, 1979, pp. 24-25.

** The price per ton of coal delivered "free on board" a railroad freight car.

developing a conservative approach to estimating this f.o.b. price, we will examine how this f.o.b. price is shaped by a combination of market forces and DOI coal leasing policies.

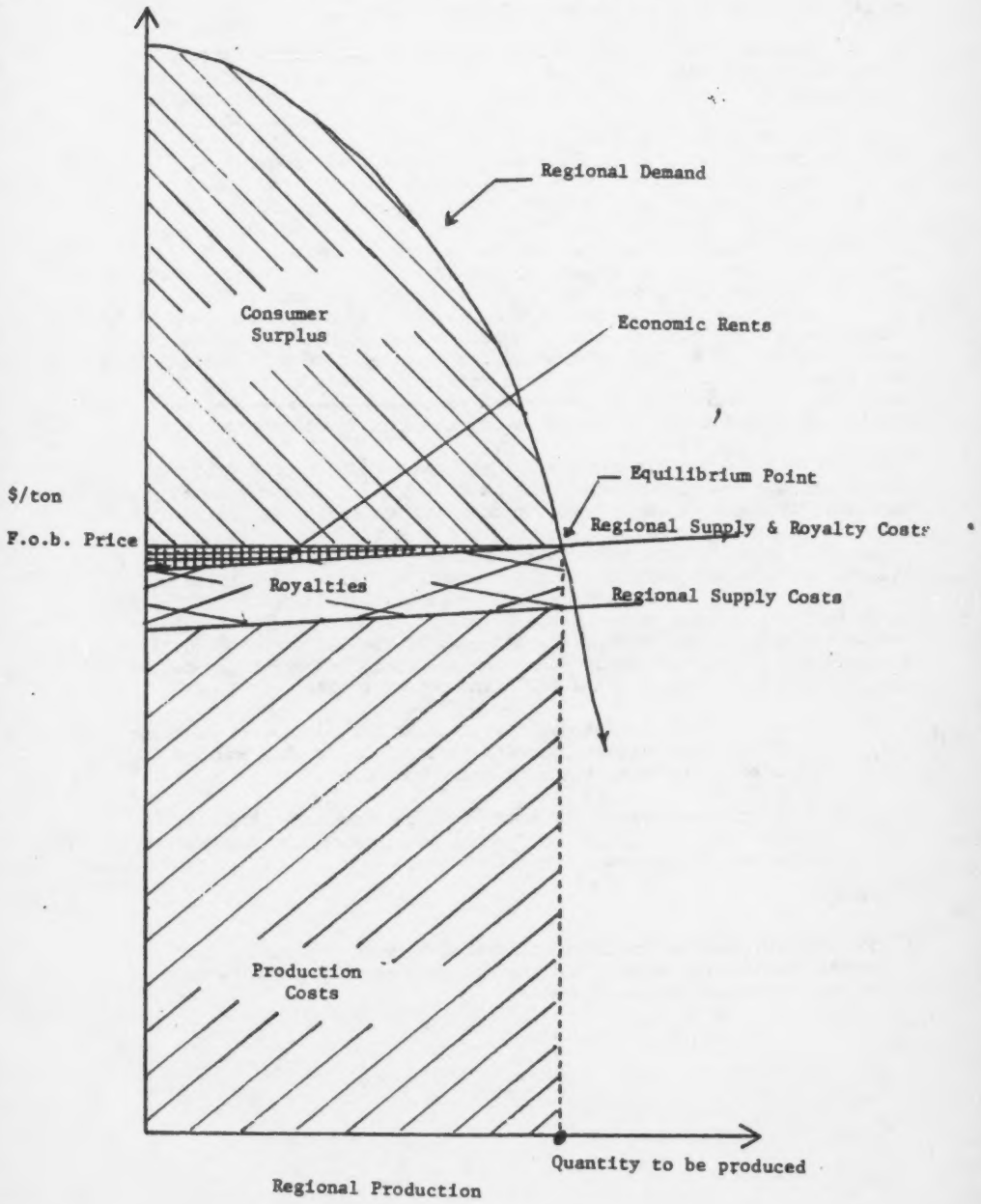
If the supply of Federal coal in a region was totally unrestricted, then a competitive equilibrium of the regional coal supply and f.o.b. coal demand would result in the selection of only the highest-quality, lowest cost coal for production, would determine the number of mines which would receive production contracts, and would set the f.o.b. price which would be paid in the region for such coal production. Because of the vast supply and similar production costs per ton of the finest coal within each western region, most of the social welfare benefits at this market-determined optimum point would be in the form of consumer surplus* rather than in the form of economic rents to producers. (See graph on following page.) At this point of competitive equilibrium, the f.o.b. price would equal the average cost per ton of coal production from the marginal mine, i.e., from the last, and highest cost mine which is able to obtain a coal production contract in the region. Thus, the producer of the marginal mine will obtain zero economic rent. But because unit production costs would not be much lower on other mines which get contracts than the unit cost at the margin, there would be minimal economic rents to all producers.

Consumers will be the big winners in that the amount of coal produced will be at the lowest possible price, assuming all tracts developed have insignificant external costs of coal extraction (those costs to society not paid by producers and thus not accounted for by the market in allocating production contracts). However, some tracts may have significant external costs or external benefits. Also, principles of multiple resource planning suggest that unlimited availability of Federal lands for coal leasing may prematurely commit, or overcommit, such lands to a single use. The policy selected by the DOI for consideration of these additional factors in Federal coal leasing is multi-faceted and includes utilization of the following policy tools:

- Strict enforcement of those laws such as the surface reclamation law which require coal producers to internalize what would otherwise be external costs of coal production.
- Diligence requirements and total acreage ownership limits to prevent idle speculation in Federal coal properties and premature single use commitment of Federal lands.

* Consumer surplus is the value difference between the amount that buyers are willing to pay, and the amount that they actually have to pay, to obtain their purchases.

Graph Depicting Equilibrium of Supply and Demand



- A Federal coal management system wherein Federal coal tracts are screened and those tracts having high potential external social costs (such as risks to endangered species) would not be made available for lease; ranking of tracts by quality so that the ordering of tracts offered would be the same as would be determined by competition in an unrestricted market; and use of regional production targets to guide the offering of tracts in sufficient number to allow the amount of coal produced to be similar to the production level which would occur in an unrestricted market.

Because of the very large amount of high-quality, low-production-cost coal whose potential development could be unlocked by Federal coal leasing, the screening out of Federal tracts having high potential external social costs from the set of tracts available for leasing is expected to have only a minimal effect on the potential supply or cost of coal in each region. Therefore, if the regional production target is set correctly or slightly too high, and quality-ranked Federal coal tracts are leased accordingly, the market results of such restricted leasing should be very similar to those of unrestricted leasing of Federal coal, but with a lower level of external social costs. In other words, a similar level of coal production should result, the f.o.b. price should be very close to the f.o.b. price in the unrestricted supply case, and economic rents on leased tracts should be very small. But if the regional production target is set too low, the number of tracts leased may not be sufficient to achieve the above desirable conditions. In this case, a lower level of coal production will tend to result, the f.o.b. price will tend to be higher, and economic rents may be significant on leased tracts. However, where signs of significant rents or inadequate post-sale competition for production contracts are evident, the identified Departmental response will be to lease coal as rapidly as possible within the checks and balances of the system* until these conditions are mitigated. Awareness by the coal-production and utility industries of this Departmental policy will tend to bring the f.o.b. price rapidly to this "competitive" level even if initial lease offerings are small in number, because the certainty that continued leasing would soon force this competitive price would allow utilities safely to refuse to pay anything higher, early on.

Another policy tool by which the government can assure that the "competitive" f.o.b. price obtains is to require in its lease terms that produced coal be sold at "reasonable" prices. Although this is

* See Statement by Charles Rech, Acting Director, OCLPC, at public hearing on fair market value, November 1, 1979, from Proceedings, p. 219.

a legally available policy tool, due caution is advised in its utilization. If possible, it would be much better to rely on a highly competitive post-sale market to determine what is a reasonable f.o.b. price or is a reasonable return on coal mining investments, than to have the government make such determinations.

The threat of direct competition in production by the utilities will also tend to keep rents low. Evidence of large rents will be apparent to utilities from their detailed reviews of potential producers' mining costs in their awarding of contracts, and in the degree of competition they observe for their contracts. In such a case, utilities will be tempted to seek to purchase leases directly from the Federal government and to produce these leases themselves in order to capture the large rents. In order to avert this, coal companies with Federal leases may be willing to sell to utilities at the "competitive" price even when competition by other firms is weak.

Thus, our examination leads us to conclude that DOI's coal leasing policies and competitive market forces will combine to move the f.o.b. price on new Federal coal leases very close to the f.o.b. price which would obtain in the case of an unrestricted supply of Federal coal in the relevant western sale region (given a 12.5 percent royalty in both cases). We shall now consider an approach to estimating this f.o.b. price conservatively for use in DCF calculations of the expected present value economic rent of Federal coal leases.

One important initial observation is that because economic rent from coal production represents a very small difference between two large numbers, f.o.b. price and cost per ton of production, independent estimation of these two factors will tend to produce a DCF output whose estimation error is of the same order of magnitude as the rent value being estimated.* Such an error-prone estimate is unlikely to be particularly useful for reservation-price purposes. A superior approach would be to key the more uncertain of the two factors, the f.o.b. price, to the cost data so that the estimation error in the DCF output will be small. The obvious place to link these two factors is at the market equilibrium point where the average cost per ton of production from the marginal mine is exactly equal to the f.o.b. price.

A second important observation is that the most expensive to mine Federal coal tract (per ton of production as part of its logical production unit) which is likely to be leased and produced in the region can be considered to be the marginal mine for the purposes of estimating the f.o.b. price. This is because it is the marginal mine which is always driven out of a market by a new entry. The

* See appendix for an example of how this can occur.

most expensive to mine Federal tract which obtains a contract will thus either become the new marginal mine or be very close to marginal; otherwise, another, slightly higher cost Federal tract would have obtained a production contract and the former tract would not have been properly defined as the highest cost Federal tract to obtain a contract.

Thus, our task becomes one of estimating which Federal coal lease is likely to be the marginal mine and then setting the f.o.b. price equal to its estimated average cost per ton of production. To identify this marginal mine will require at least a simple model of regional supply and demand. If new Federal coal leases (as part of their logical production units) are expected to be producible at a much lower cost than existing coal supplies within a region, then development of a post-sale regional supply cost curve (a graph of the production cost per ton of each additional ton of coal production from the region) is simplified. It can be assumed that all new coal production contracts will be to newly leased Federal coal tracts. Thus, the post-sale regional supply cost curve can be based on the estimated cost of production of the Federal coal tracts to be leased in the region in order of their increasing production cost per ton. Where existing coal supplies may be competitive with new Federal offerings, such existing coal supplies must be factored into the regional supply cost curve as well. However, it is most likely that the only portion of the supply cost curve needing to be estimated is that which is related to the lowest cost per ton Federal coal tracts within the region.

The tract-specific cost data necessary to develop the supply cost curve should become available from the tract-ranking step of the Federal coal leasing process. To be conservative, this supply cost curve should be estimated using low mining cost assumptions. A supply cost curve estimated in this manner should yield a conservative, low estimate of the f.o.b. price for whatever amount of coal is produced from the region.

Besides the regional supply cost curve, there must also be developed a regional demand curve which is a graph of the amount of f.o.b. coal which would be contracted from the region at any given f.o.b. price. This demand curve can be estimated in several ways. One way is to use a curve provided by ICF from their national coal model. A second method is to develop such a curve in-house via the USGS coal transportation model. A third approach is to survey the most likely potential contractors for the region's coal regarding their planned projects for which they will be contracting f.o.b. coal from the region if such coal should become available. These individual demand responses as a function of f.o.b. price could then be combined to find the regional demand curve.

The intersection of the conservatively estimated regional coal supply cost curve with the estimated regional demand curve will determine the equilibrium point of supply and demand and determine a conservative estimate of the f.o.b. price for the region. Where the demand curve cannot be developed, the marginal point (and f.o.b. price) can be approximated directly based on the DOE regional production goal and the estimated regional supply cost curve. The f.o.b. price estimated in this manner would be in the proper form to use as an input to a DCF model for conservative estimation of the expected present value economic rents of Federal coal leases where such rent estimates will be utilized directly as reservation prices.

The advantages of the use of a conservative approach to DCF analysis are apparent from the above discussion. Its disadvantages are:

1. Determination of marginal-mine price will be a difficult job, and, in fact, the analytics to make this determination are as yet undeveloped. A policy of using both prices from a market survey and from cost-plus analyses during a prove-in period is suggested.
2. The Department will be subject to renewed criticism from those who equate fair market value with outright maximization of the government's receipts from coal sales.
3. The actual net benefits of this more conservative DCF approach, which will increase the tract evaluation workload, are at this time unknown.

Appendix

1. Consider the case where price p is actually 10 percent above cost c . Then:

$$p = 1.1c$$

$$\text{and rent} = p - c = 1.1c - c = .1c$$

Suppose estimates $\hat{p}$ and $\hat{c}$ have independent errors $\hat{e}_1$ and $\hat{e}_2$ such that $\hat{e}_1$ and $\hat{e}_2$ are normally distributed with means 0 and standard deviations $.1p$ and $.05c$, respectively.

$$\text{Then rent estimate} = \hat{p} - \hat{c}$$

$$= p + \hat{e}_1 - (c + \hat{e}_2)$$

$$= p - c + (\hat{e}_1 - \hat{e}_2)$$

Now because $\hat{e}_1$ and $\hat{e}_2$ are independent, the mean of $\hat{e}_1 - \hat{e}_2$ is zero but its standard deviation is

$$\sqrt{(.1p)^2 + (.05c)^2} = \sqrt{(.1(1.1c))^2 + (.05c)^2} = .121c.$$

Thus, the error term in our rent estimate has a standard deviation greater than the actual rent which is $.1c$.

2. Consider the above case but where estimates $\hat{p}$ and $\hat{c}$ are not independent, i.e., where the relationship between price and cost is known, but the absolute level of the price and cost is uncertain. In this case we would estimate rent using our known relationship and the factor having the smallest uncertainty which is our cost factor, as follows:

$$\text{rent estimate} = \hat{p} - \hat{c}$$

$$= 1.1\hat{c} - \hat{c}$$

$$= .1\hat{c}$$

$$= .1(c + \hat{e}_2)$$

$$= .1c + .1\hat{e}_2$$

The mean of $.1\hat{e}_2$ will be zero and its standard deviation will be $.1(.05c) = .005c$.

Thus, the standard deviation of the error term in our rent estimate will be small in relation to the actual rent which is $.1c$.

FAIR MARKET VALUE BRIEFING PAPER: Option 6

Question: Should different evaluation procedures be used for large than for small tracts?

Analysis: In Federal coal leasing, tract evaluation via discounted cash flow (DCF) methods is useful when it increases the size of the share of the economic rents captured by the government over the size of that share which would have been captured without such evaluations. It is clearly the Congressional intent that such work should only be carried out if returns to the government warrant it. The method by which DCF-based tract evaluations improve Federal rent-capture is by allowing for a more accurate, higher setting of minimum acceptable bids on tracts. Such a procedure is used because competition is expected to be weak. However, because these evaluations are not cost-free, they are socially wasteful if unnecessary or if they do not result in rent-capture increases exceeding their costs. The Congress has already determined a reasonably high level for minimum royalties on surface mined coal which is complemented by a similar level for underground coal set by the Department. Many small tracts will not, after an independent evaluation, exceed these pre-set values. Where DCF methods are not cost-effective, a flat-rate minimum acceptable bid approach would be preferable. Thus, there would seem to be a cost-effective mix of tracts for which detailed evaluations should be carried out and tracts for which they should not. This observation led the task force to its recommendation in Section 1 for use of a mix of systems. The two systems recommended are described earlier in this section—options 3 and 5. Since quantitative data were not available to the task force to carry out the study of the appropriate definition of small tracts, this study is recommended as further work.

Recommended Policy: Evaluation procedures which lead to tract-specific reservation prices should be utilized for large tracts; evaluation procedures which lead to flat-rate reservation prices should be utilized for small tracts. Small tracts are hereby defined to be those having the following characteristics, all other tracts being defined to be large tracts:

1. Any tract for which the USGS designated responsible official and the BLM authorized officer jointly determine significant economies of scale exist only if mined with adjoining non-Federal coal. (Generally, significant economies of scale exist if the total cost per ton of production from the candidate small tract operated as a single mining unit in conjunction with the adjoining, available non-Federal coal or with existing leased Federal coal were on the order of 25 percent less than the candidate tract operated as an independent mining unit made up entirely of the most efficient block of contiguous, unleased Federal coal.)

2. Any tract qualifying for lease on application, e.g., emergency leasing, under subpart 3425 of the Federal coal management regulations. In addition, any small tract qualifying for lease on application because it is outside coal production regions or because it is a special hardship lease or any tract qualifying because of loss of efficiencies of scale should not contain greater than 30 percent of the unmined reserves of the probable combined mining unit.

Final definition of what constitutes a small tract should be based on an OCLPC-supervised study concerning the feasibility and possible incremental benefits of utilizing tract-specific reservation prices instead of flat-rate reservation prices.

SECTION IV: MODIFICATIONS TO FEDERAL COAL MANAGEMENT PROCEDURES ON FAIR MARKET VALUE

In addition to considering the major viable process options available, the fair market value task force also studied more specific changes the Department might put into effect to improve its fair market value policy and procedures. These studies were suggested by the June SID recommendations. The resulting options for change are summarized in this section. The two major areas for study were changes to enhance competition and changes to resolve the small tract problems.

Enhancement of competition was the number one recommendation of the June 1979 report of the Fair Market Value Task Force to the Secretary.

Small tract evaluation procedures have been the number one cause of evaluation difficulties. These evaluations are difficult because of the basic all-or-nothing tract value question that underlies them. Within a wide range small tract values are set by bargaining ability. The small tract evaluation question is technically not answerable without making some rather arbitrary judgments about the bargaining strength of the would-be lessee and the willingness of the Department to see some coal bypassed.

Other specific changes discussed in this section concern the release of information, selection of discount rates, and study of a profit-sharing system. Recommendations resulting from these considerations are presented in Section I; the option descriptions provided in this section should give further guidance on the intent of these task force recommendations.

Question: What changes can the Department of the Interior make to foster greater competition for Federal coal leases?

Background: Key to all Fair Market Value strategies is the need for the Department to take steps to enhance bidding competition at coal lease sales. This was the primary recommendation of the FMV task force in the June 1979, Secretarial Issue Document. Because of comments received from the public and the views of the outside expert panel on fair market value, it has grown even more important in the minds of the task force since. The following possible actions to enhance competition apply to all the procedural alternatives.

One possible means for enhancing competition is the use of intertract sales. The FMV task force believes significant conceptual advances have been made towards a workable intertract sale system (progress due in large part to the participation of the intertract bidding task force chairman on the FMV task force). The intertract bidding process is presented in Section V. Because it is still the subject of another task force, no recommendation is made here.

Dr. James B. Ramsey, a member of the expert panel, strongly believed that, if high economic rents were truly available, the market would find a way to provide the competition necessary for active auctions that would result in the government's receiving the rent involved in the sale, but he also urged the Department to be more aggressive in seeking methods of increasing sale bidding competition. He urged the Department to look closely for ways, both through policy and legislative changes, to remove barriers to participation from those persons whose interest in Federal leases was based on assembling land for later assignment to coal companies rather than on immediate production. Enhanced competition, both actual and perceived, would result if such a secondary market were present. The task force recognizes that the past decade of confusion and change was ignited by the perception by the Congress and the Department that there was too much idle speculation in Federal coal properties. The task force believes it is possible to strike a balance in policy between encouraging an active secondary market in coal properties to foster greater bidding competition while avoiding very long-term holdings of Federal coal leases without active development at very low costs.

Possible means of fostering competition are set out below:

1. Pre-sale Unitization. Nearly everyone's first choice for a method to improve competition is the use of unitization prior to sale of private, State, and Federal coal into a single efficient property for coal production. Divided private-Federal ownership often gives an advantage to the coal developer that has control of the private lands because only he can be certain of having enough reserves for

an efficient sized mining unit. Pre-sale unitization could avoid Federal sales that have the appearance that one bidder is in a favored position due to his other holdings, thereby discouraging more bidders from competing for the tract. In the recently completed Green River-Hams Fork delineation 9 of the 15 tract study areas (preliminary logical mining units) included significant private lands.

Despite the fact that the unitization concept appears to be highly desirable to most persons who have thought about Federal coal leasing, the Department has not been very successful at getting a unitization effort going. Part of the difficulty lies in the uncertain authority of the Secretary. The Congress appeared to some to repeal the authority of the Secretary to foster "collective contracts" for development or operation of the coal resource in drafting the Federal Coal Leasing Amendments Act of 1976. The following language is from the House report on that bill:

"Section 5 repeals, subject to valid existing rights, subsections 2(c) and 2(d) of the Act of August 31, 1964 (30 U.S.C. 201-1). These subsections permitted lessees of a coalfield to enter into contracts for collective prospecting, development or operation of the coal resources. They also enabled the Secretary to combine, alter, or revoke leases, royalty agreements and the like in furtherance of collective contracts.

"This new language eliminates collective contracts in favor of the concept of the logical mining unit (LMU). A logical mining unit is a contiguous tract of land, under the control of a single operator, which is designed to promote the 'efficient, economical and orderly' recovery of the resources contained therein. The new language enables the consolidation by the Secretary of several tracts (be they Federal, State or private) into a single tract not exceeding 25,000 acres so that they may be mined in the most economically efficient manner. All the reserves within the entire LMU must be mined in a period not to exceed forty years, and the unit as a whole is subject to the requirements of diligent development and continuous operation. The new language also permits the Secretary to require a lessee (emphasis added) to form an LMU."

The effect of the changes in the coal leasing laws are unclear. What is clear is that the Secretary's authority was clouded by the change. Discussions with members of the Department who were involved in the final stages of drafting and reviewing FCLAA, however,

have led the task force to conclude that the Congress did not mean to diminish any power the Secretary already had to foster unitization of Federal and non-Federal coal tracts.

Thus, for example, it appears possible that the Department could adopt as policy the position that it might decline to conclude leases of Federal coal where a contract on unitization of Federal and non-Federal coal does not exist between a high-bidder for Federal coal and the private owner. This would be very similar to the policy the Department has adopted for ensuring competition on tracts involving surface owner consents. There the Department declines to lease lands without transferable consents. To initiate such a procedure, the Department could notify the owners of adjoining private coal that it is considering proceeding with the leasing of Federal coal that could most efficiently be mined with their property (i.e., greater benefits to both parties) and ask them for an indication if at that time they were willing to consider entering their property into a unitization agreement with the eventual winner of the Federal lease. Either the lessee or the non-Federal property owner or his assignee could be the operator of the unitized mining unit. If the Government received an indication the private owner was willing to consider unitization proposals from the eventual Federal high-bidder, the Department would proceed through lease sale in the normal fashion. Otherwise, it might drop the tract from future sale schedules for a fixed time, say 10 years. The sale notice for tracts to be unitized would include an announcement that the eventual high-bidder on the lease would be required to negotiate a unitization agreement with the adjoining owner and that the Department would consider the return of bonus if after good faith negotiations by the identified Federal high bidder, a unitization agreement were not concluded with the adjoining private owner. The lease would not be signed until the high bidder and the adjoining Federal owner had concluded their negotiations.

This is but one of several possible approaches to overcoming ownership barriers to competition—aggressively seeking voluntary unitization. It is the judgment of the task force that unitization will not be transformed from the conceptual stage to a workable tool until the Department actually attempts to carry it out in the field, and this assessment is reflected in the recommendation.

2. Avoidance of Large Front-end Payments. Large front-end payments (bonuses) discourage coal land brokers, one possible source of competition at coal lease sales. While the Department should not encourage idle speculators to acquire coal and hold land at very low cost by extremely low front end costs, it might still take

steps to encourage persons willing to enter the market to acquire Federal lands in order to repackage them and resell them to coal operators. It could do this by keeping the front end cost within reach of the small entrepreneurial firm. Just the knowledge that such entrepreneurs were present in the market would foster a higher level of competition at Federal sales. The FMV task force report on June 1 set the Department on a policy of capturing tract rents mainly through bonuses rather than royalty payments. This recommendation, which increases front end costs, still holds. The task force does consider that it would be beneficial to use the deferred bonus policy to reduce payments at the sale and in the initial years of the lease.

3. Diligence. Another major factor discouraging brokering of coal leases is the 10 year diligent development requirement. The FMV task force was urged by some to seek legislative change to this requirement, but rejects the notion because of the many key roles the presence of diligence requirements plays in the Department's overall Federal coal management policy. At the same time the task force urges the Department to guard against attempts to make diligence requirements more stringent through regulations.
4. Sales Methods. Possible changes to sales methods could improve competition. A task force paper by C. E. Brownell, "Recommended Sale Procedures" suggests one type of change that might be made. That paper considers means to leave some tracts that do not receive minimum bids "on the block" for an extended time (up to 6 months) to allow land brokers and coal companies the chance to compete for them after the result of other tract bids become known. The task force suggests that all sales be conducted in two stages of sealed bids followed by oral auction. The task force recognizes the expertise of the BLM in this area and defers to that agency for other means to increase competition through appropriate sales methods. The task force notes in passing that BLM in the past has used sales methods to block "nuisance" bids; this practice should be reviewed.
5. Information Availability. Easier access to information on coal characteristics should increase coal competition especially from smaller firms. High information costs and withholding of information act as barriers to potential coal lessees. Information policy considerations relating to fair market value are treated later in this section.
6. Access. The Bureau of Land Management has studied the benefits that might be expected from guaranteed access. The conclusions from that study should be available shortly.

Recommendations (also in Section I):

1. The task force recommends that the Department identify several means to attain unitization (a final report on this topic should be available from the Office of Policy Analysis shortly) and try out the most promising on one of the later scheduled tracts in the sales in Green River-Hams Fork. A tract should be selected that is conducive to unitization, for which clear benefits are to be had by both parties, and for which success appears most likely.
2. The task force recommends that the Director, BLM, examine implementing a system whereby all sales involving bonuses are on a deferred bonus basis and the sum of the first three bonus payments due the government would never be greater than, say, \$500,000 nor less than \$25,000. The BLM should also decide whether to extend the number of deferred payments above five. An exemption from this rule for very small tracts would also be needed. This recommendation would be consistent with the Congressional preference for deferred bonuses.
3. BLM should design and implement sales methods that will foster greater competition for Federal coal leases. Specifically, BLM might consider continuing sales; opening oral bidding to anyone that bids on any tract in the sale; or using oral bidding whenever the second-high sealed bidder is within 50 percent of the bid of the high sealed bidder.

Question: Should the in-house Geological Survey discounted cash flow model or successors be released to the public?

Background: The currently used DCF model for making coal resource economic evaluations was developed and documented internally with support from GSA computer specialists. Its design follows accepted cash flow principles and has been described in the technical literature. 1/ The issue of release of the model (i.e., the documentation) was discussed in memorandum of August 16, 1977, prepared by Assistant Division Chief, Resource Evaluation, Conservation Division, USGS. 2/ This statement needs review in view of the decision in the "Pitman" 3/ case regarding release of the model and data on a coal tract and the Department's new management philosophy on Federal coal.

Analysis: There is a need for the public to understand the economic evaluation procedures. However, it would seem this requirement is met in the technical paper which was published.

Given that the Pitman case does not require disclosure, potential disclosure could encourage potential bidders to concentrate their efforts toward predicting the Geological Survey's estimates rather than formulating their own independent estimate of the value of the lease, particularly where very low levels of competition are anticipated and, hence, where independent judgment of value is most important. In more inherently competitive situations, competition could be inhibited because potential bidders who determined that Geological Survey values for a tract were likely to be much higher than their own estimates would be discouraged from bidding on the tract. Moreover, the potential for collusion among bidders is increased with any increase in the measure of predictability of Geological Survey values.

Disclosure of full details of the methodology would provide a target of opportunity for high bidders with rejected offerings, subjecting the Department of the Interior to more lengthy, costly, and highly technical legal proceedings requiring judgment on technical matters which are difficult to assess in the courts.

Recommended Policy or Options: The generalized approach is already released (Ref. 1). Do not release model, but release major assumptions in the model upon request, for example, discount rate contingency costs, etc., that have been approved by the Department.

References:

1. Pederson, J.A., Blair, T.J., Connors, F.W., and Smith, M.T., 1979, Coal resource economic evaluation, in SPE-AIME Eighth Hydrocarbon Economics and Evaluation Symposium, Dallas, Texas, February 11-13, 1979, Proceedings: Society of Petroleum Engineers Paper APE 7718, p. 62-69.

2. Memorandum August 16, 1977, To: Director, Geological Survey, From: Assistant Division Chief, Resource Evaluation, Subject: "Rationale for not Disclosing Detailed Descriptions of Computer Models Used in Resource Economic Evaluations"
3. Frank Pitman vs. Department of the Interior, Civil Action No. 76-F-1022, Judgment August 24, 1977.

Question: What categories of data should be provided prior to sale to the public and potential bidders prior to sale for their use in preparation of bids for coal leases?

Background: The Federal Coal Leasing Amendments Act of 1976 provides that quantity and quality data on coal resources, associated formations, environmental factors, along with an assessment of mining methods, including maximum economic recovery determinations of reserve, be made available to the public. These statutes indicate that these data can be obtained through government financed or through industry data gathering programs such as test drilling.

The question of what categories of data to be made available to the public and potential bidders subdivides into two issues:

1. Providing adequate coal resource and associated overburden, underburden, and interburden, hydrologic and related physical factors, plus basic elements of mining methods and equipment and facilities so that the public can assess the value of the coal resource, and potential lessees can devise an adequate plan for development including costs and revenues and to prepare a bid on the tract of interest.
2. Provide all resource, mine design, cost, and revenue factors along with the minimum acceptable bid for the tracts offered in a lease sale.

In most cases appraisal values are made public or at least available to the potential buyers (or sellers) prior to the start of a sale or negotiation. Making the minimum acceptable bid known to potential bidders in some fashion advises them of at least the minimum expectations of the government and saves them the time and cost of preparing bids which have no chance of success. It leaves them free to consider the competition from other potential bidders, and they will not have to outguess the seller as well.

Analyses: Release of data on the physical description of the tract is designed to provide the serious potential bidder with the data on coal resource and associated environment along with informing the public. From their data the firm could design an optimum mine, select equipment and necessary facilities, and specify the costs and revenue elements applicable to the firm, and thereby develop a basis for bidding on the tracts in which it has an interest. This approach seems most applicable to leases that would require the development of new mines and associated facilities and tend to have a competitive interest.

Release of all data, including economic-based data, provides an estimate of all levels of input data and final results of coal resource, mine design and costing through to, and including, tract value. The costs

and revenue parameters must be obtained from varied sources. In addition, in times of double digit inflation the changes in base level of the monetary factors changes significantly in a short time so that the useful life of the cost data is limited. In this approach a potential bidder can enter the scene at any level of data development. However, if the bidder does not start with an assessment of the raw resource data, he will not have a complete understanding of the strength, and applicability, of the available information. If these data are used by a firm, the Government must be careful not to be made liable for effects on operations that are incurred because of reliance on the Government provided data. This practice may lead to collusion because all firms would have a value to zero in on and accordingly may desire to minimize the difference between Government values and their bids. This approach seems more applicable to small tracts where the offset operator and/or applicant has extensive knowledge of the coal resource, its feasibility of mining and probable mining operation.

Therefore, he knows the basic factors and is probably most interested in obtaining the best personal bargaining position. Greater knowledge of the Government assessment of the value of the coal resource would tend to enhance the interested firm's ability to acquire the tract at lesser cost.

Recommended Policy or Options: The FMV task force recommends that the policy be to release comprehensive coal resource information (including preliminary estimates of MER reserve amounts), overburden, interburden, and underburden, other resource data, as well as equipment selection, generalized mine plant design, and facilities information. A preliminary minimum acceptable bid should be published, as is done under the present procedures, and the Department should ask for comment on this estimate.

References:

1. Pederson, John A., "Public Disclosure of Resource, Recovery, and Economic Data on Coal Tracts Prior to Lease Sale." Report, November 1979, U.S. Geological Survey, prepared for Office of Coal Leasing, Planning and Coordination.

Question: Should the Department examine the possible use of a profit-sharing system for Federal coal leases?

Background: Comments from both industry and Indian tribe representatives have strongly challenged the government's concept of the amount of rents that are available to the government in Federal coal lease sales. Industry asserts that there are little or no resource rents, especially after a cost allowance for developmental risks. Indian representatives on the other hand argue that even with the existing FMV system, the government's estimates of rent are biased downward, i.e., we are already backed considerably away from full rent capture. The intensity of feelings on both sides is such that the Department is unlikely to be able to get either group to move from their positions.

There is a payment system, however, that would allow the government to collect "rents" without trying to determine them prior to sale and thus circumvents rent arguments and a great deal of administrative complexity. It also allows the government and industry to share the risk of non-development. This system is the so-called profit-sharing system. The system might more accurately be called an excess-profit sharing system since normal profits are not shared. Use of such a system by the Department could only be implemented with the full agreement of the Department of Energy. With an all-out effort a profit-sharing system might be ready by 1982.

Analysis: There are several methods of profit sharing. Worldwide profit sharing has become the standard form of agreement between a resource-owning governmental entity and a private-sector resource developer. One example of a profit-sharing system is the annuity-capital recovery system. This system comes close to identifying the true economic rent for division between the government and the lessee. Under this system the total capital outlays (equity investment) of the project are converted to an annual annuity that is subtracted from profits. Thus the private investor is ensured return on his capital. Loss carry forward is included in many profit sharing systems. The profit-sharing system is administratively awkward. Usually, a simplified accounting system is used that involves only direct, easily verifiable costs. The government would probably lease tracts in profit-sharing sales with a mandatory stipulation that bookkeeping be on the basis of an entire mine project to avoid the complexity of keeping books on every lease involved in the project. The Department must agree with the lessee on a formula for assigning what portion of the project's profits would be assigned to the lease, etc., which could be difficult (cf., small tracts paper on disaggregation).

There are several bid variables that can be used in a profit-sharing payment system, for example:

1. The bidders might bid the share of profit they will pay the government (fixed share) with government royalty and bonus fixed;
2. The government might select a profit sharing split and the bidders bid a bonus payment; or
3. The government might select a profit sharing split, together with a minimum bonus and royalty, and the bidder bids the starting level for the profit measurement.

This last option could be made clearer, perhaps, with an example. Suppose the government decides to require payment of 50 percent of all taxable income less an annualized return to investor's capital. The bidder would bid what he believed was an acceptable annualized return to capital to him, thus relieving the government of the need to compute (or audit) what the "fair" return to capital was on the lease portion of the project. The government would receive a low bonus, minimum required royalty, and 50 percent, say, of all net income greater than the bid amount. (Note: the FMV task force believes that the fixing of the Government's share of profit is likely to be based on broad policy considerations.) Rather than a straight profit split, it is also possible to use a profit share schedule with the government's share increasing the higher the level of excess profits. This sliding-scale approach is more consistent with capture of very large rents by the government than a straight profit split. Thus, under the third bidding system above with the annualized annuity the bid amount, the government might split profits 50-50 up to twice the annualized rate of return, take 60 percent up to three times the bid rate, and 75 percent over that. With a bonus bid system, the rate schedule could be determined off of a DCF evaluation, again topping at 75 percent at some proportion of the DCF evaluation.

This sub-option is compatible with all the major procedural options.

Recommendation: The FMV task force recommends that the BLM and GS form an implementation group with direct DOE participation to devise a profit-sharing system that could be implementable by early 1982. LCC is assigned management oversight for this group. It is assumed that this system will be implemented for the Powder River sale unless the Director, USGS, the Director, BLM, or the Department of Energy decide upon review of the implementation group's proposal to veto such implementation by memorandum to the Secretary of the Interior. In the case of BLM and USGS this veto would be expected to only be on grounds of administrative and other direct regulatory costs.

Reference:

1. "Analyzing Profit-Share Leasing," prepared for the Office of Policy Analysis by Resource Planning Associates, Inc., August 7, 1979.

* See S.L. McDonald, "The Leasing of Federal Lands for Fossil Fuels Production," RFF, 1979, pp. 102-105

QUESTION: HOW CAN THE DEPARTMENT IMPROVE ITS EVALUATION OF SMALL TRACTS?

Because of the task force's major recommendation, these technical changes are of reduced importance; however, they will still apply in certain situations such as large, mixed ownership tracts, exchanges, and, possibly lease modification.

A. Question: Should the current practice be continued of aggregating lands, regardless of ownership, for the purpose of computing a coal economic valuation or should the evaluation be based on available Federal coal lands only?

Background: Economies of scale can in fact be gained by the combination of small tracts of coal resources into larger more viable economic mining unit (VEMU). Often the larger unit is the only way of mining any of the coal economically; sometimes, however, smaller tracts could be mined independently using higher unit cost methods. Standard practice has been to combine all available lands to determine value.

Analysis: Evaluating a small tract in isolation would probably result in a low or zero value finding and not be representative of the methods and costs related to how the coal would most likely be mined in reality. Evaluating a small tract within a larger VEMU would result in a larger value, but can be open to criticism of capturing value from non-Federal coal or value created by the ingenuity of the private operator. However, the latter criticism is one of distribution of value among the component tracts and not a question of value computation (this issue has been legally resolved for oil and gas deposits, see reference 1 and briefing paper on "disaggregation of value"). Expert consultants to the task force recommended a "value in use" approach over a "market value" approach for small tracts because of the captive nature of the tract, i.e., there is no presumption of effective competition among bidders. This approach violates appraisal concepts.

Recommended Policy: Form a viable economic mining unit in defining the DCF land base which does estimate the highest value in use of the available Federal and non-Federal unmined coal and then disaggregate the Federal value as suggested in part B, following. In cases where a lease applicant is involved, "available" would include the applicant's land.

Reference:

1. Pederson, John A.; "Procedures for Evaluating Small Tracts;" Task Force background paper, October 1979.

8. Question: How should the computed coal economic value be apportioned among various ownership in cases where one or more Federal tracts have been combined with non-Federal tracts to form a viable economic mining unit (VEMU)?

Background: The current practice is to apportion the value only in proportion to recoverable coal resources. This method, however, ignores the possible differences in mining costs, coal quality, and the time period in the mine-life cycle when the tract may be mined. (Because of the discounting process, coal mined early in the cycle is more valuable than coal mined later, cet. par.)

Analysis: The current practice is good as far as it goes, but it could fail to account for some significant elements affecting tract value. Certain tract related mining costs, such as haul length differentials, could be easily estimated and incorporated in the disaggregation process. Also the timing of tract production could be incorporated in each run though estimating time of removal may be difficult. Coal quality differences cannot be handled within the model or the disaggregation process; this is not expected to be a significant problem in any given VEMU; where it is, some adjustment could be made in the price used to compute the CREV.

Recommended Policy:

1. Retain the current practice of disaggregating the DCF evaluation in proportion to recoverable coal reserves as the basic methodology with the addition of certain tract related mining and administrative costs when significant differences are expected to exist across the mining unit. (See No. 2 below.) Consideration should be given to the inherent greater uncertainty of small tracts.
2. For small tracts which are known, or reasonably assumed, to go into production toward the beginning or toward the end of the VEMU time cycle or for small tracts where a few key cost items are significantly different than other tracts in the VEMU, an analysis "with and without" the proposed tract should be made to estimate the proper adjustment factor.

References:

1. Palerson, John A.; "Procedures for Evaluating Small Tracts," Task Force Background Paper, October 1979.

C. Question: Should the Department seek enhanced industry participation in pre-sale minimum acceptable bid determinations?

Background: Though there is disagreement between the task force and the expert panel on the number of sales in which there will be only one or two bidders (see bid averaging paper in Section III), there is agreement that the Department will face enough of these low-bidder cases that it should not adopt a policy of outright rejecting bids and withholding tracts from sale because of lack of bidders. Though the Federal coal management program is operating in a greatly changed environment, it should be noted that between 1965 and 1975 the Department received 1.89 bids per coal lease offering on average. One possibility for managing low bidder sales, which will be most prevalent on small tracts, would be to use an enhanced procedure of pre-sale participation from potential lease bidders.

The coal management regulations presently only require that the authorized officer solicit public comment on fair market value of tracts not less than 30 days prior to the publication of sale. These comments are only on factors that might affect the appraisal of the tract or tracts. Subsequently, in the sale notice the authorized officer announces the preliminary minimum acceptable bid (MAB) to be considered. Though it is not necessarily the case, the task force has assumed that the MAB will be equal to or less than fair market value pre-sale estimates. Bidders are not given an opportunity to comment on the preliminary minimum acceptable bid. For low-interest sales, then, the Department could, in order to enhance use of industry concepts of value, offer an opportunity for comment on the preliminary determination of MAB by the Department. In essence, the Department should then have "bid" and "asked" prices before it determined the actual sale MAB. The possible use of a third party, outside appraiser for FMV in low interest sales or of a three-person committee of outside appraisers—one named by the Department, one named by a coal trade association, who then select their third member have also been suggested. All parties to the sale would then know the FMV of the tract as viewed by an independent appraisal effort and could proceed to sale with a much greater confidence of a successful transaction.

Analysis: There are disadvantages to either of these options. First, both require greater commitment of Department resources—in the first instance to carry out further evaluation run, as needed, after comments are received and in the second to support the independent analysis. Neither option is guaranteed of producing the desired result—reaching a mutually satisfactory understanding pre-sale for the minimum acceptable bid. It should be noted also that of the 20 small tract sales held in 1978 and 1979 only two failed. In part this is because of the use of high royalties, but these results cannot be dismissed entirely on that basis. (See also earlier paper on release of information.)

IV-16

Recommendation: The recommendation made under what data should be released included release of preliminary minimum acceptable bid for comment. No additional action is recommended.

8

D. Question: What cost and price vintage should be used in evaluating small tracts?

Background: While clearly cost and price vintages should be from the same time in small tract evaluations, the Department still must decide whether to use prices and costs representative of prices at the time long-term contracts of the applicant or most likely bidder were signed or to use those in effect at the time of the evaluation. The latter rule is applied to larger tracts.

Analysis: Differences in cost and price relative levels over time cause different evaluations of small tracts. Until recently, coal values have increased over time because coal prices grew relatively faster than mining costs. If the Department were to follow its standard policy on vintages, hardship and emergency lease applicants may be faced with minimum acceptable bids they cannot afford under the terms of their existing contracts. The decision by the Department to end high royalties will greatly increase the possibility of a lease applicant being caught in a low-contract/high-minimum bid squeeze since royalties can often be passed on under the terms of contracts while bonuses cannot (see Appendix 13 of ICF report to the task force). The operator applicant would be faced with the dilemma of not bidding on the sale he had applied for or taking a certain loss. On the other side, if cost and price vintages are rolled back to old-contract terms, the Department will be seen as favoring one sale bidder over others in what is supposed to be a competitive sale structure and subsidizing the consumers of one company's coal compared to other users of Federal coal.

Recommendation: The task force believes that emergency and hardship lessees have been identified as a group deserving special treatment and that the Department should, where old contracts are known to exist, consider, on the merits of the case, using the older coal prices and deflated mine costs in the evaluation. Otherwise, present day prices and costs should be used.

Question: Should the current fixed discount rates used in the discounted cash flow (DCF) model be changed?

Background: A DCF model can be set for any discount rate. Currently CREV uses a discount rate based on guidance in OMB Circular A-94 (March 1972) and two alternative rates (+ 2 percent from that base). The base rate is considered to be risk-free, inflation-free and after tax. The OMB discount rate was "before tax" since it was intended mainly for use on evaluating government projects. Some have argued discount rate should not remain fixed over long periods of time because of changing economic circumstances which spill over into models run on an "inflation free" basis; others have criticized the resulting coal resource economic valuations (CREV) as being too high an estimate of minimum acceptable bid (implying the discount rate is too low). Generally, the task force has endorsed a conservative approach to setting discount rate.

Analysis: Expert opinion, as reflected in publications and public meetings, is not unanimous on what the discount rate should be or even if the rate can be determined unequivocally. There is a consensus, however, that the method of determining the rate should approximate that used by private industry, i.e., compute a weighted average rate of return between the equity and debt portions of the required capital. This rate will, then, change over time, reflecting basic economic shifts in the United States. The DCF model uses current coal prices and current requisition costs for new mining equipment; these assumptions do not imply any debt/equity ratio and, therefore, the discount rate shall have to be computed from industry averages. (Generally, the task force believes the evaluation by DCF techniques would be improved by inclusion of financial and inflation factors directly in the model (see ICF, Inc., letter reports to task force.) Such a rate would be neither risk-free nor inflation-free, it would contain equity returns for average industry risks and debt costs inclusive of long-term inflation effects. Inflation could be adjusted for by means of a financial market index.

Recommended Policy: The following general formula for computing the discount rate assumes the use of summarized accounting data readily available (see Ref. 2 below); an alternative data source may result from a study underway by ICF Inc., in which case the formula may be adjusted slightly.

Recommended General Formula:

$$R = (E) (r_1) (t) + (D) (r_2) (1-t)$$

Where

R = computed discount rate

E = Percent equity

D = Percent debt

r1 = before tax rate of return to equity over long term

r2 = 30 year AA corporate bond rate

t = tax rate used in DCF model

It is further recommended that "R" be computed at three levels: medium, low range, and high range corresponding to levels of debt-equity ratios and ratios of return to equity. These data are available from reference 2 at quartile levels for the sample.

Action/Implementation: Geological Survey should test this procedural approach and similar alternatives using formulas of the same general form to institute a procedure that reflects industry discount rates which change over time. The equity rate used should reflect pre-project uncertainties.

References:

1. Dickerman, Alan R.; "Fair Market Value and the Choice of a Cash Flow Discount Rate;" Task Force Background Paper, October 1979.
2. Robert Morris Associates; "Annual Statement Studies;" Philadelphia, 1978 and annually.

SECTION V. STUDY PAPERS

The following are the study papers written by various individual members of the fair market value task force in preparing to make the recommendations set out in the previous sections. The first paper in this section is a reprint of the summary paper on fair market value prepared for the Secretarial Issue Document on the Federal coal management program in June 1979. Two other documents prepared by the Department on fair market value and considered in formulating these recommendations are:

"Tract Evaluation," Task #155 Issue Paper, Department of the Interior, GS-BLM Task Force, May 1978.

"Fair Market Value of Federal Coal: Concepts and Procedures," Fair Market Value Task Force, April 1979.

SUMMARY AND RECOMMENDATION OF DRAFT
FAIR MARKET VALUE TASK FORCE REPORT

Fair market value is an appraisal term. In Federal coal leasing it refers to the appraised market price of the unmined coal offered for lease, and represents the lower bound on the payment the government can legally accept for a coal property.

Economic rent, sometimes referred to as excess producer rent, producer surplus, or surplus profits, is a term that comes from classical economic theory. In coal property evaluation it refers to the present value difference between the market price of the mined coal and the costs, including opportunity cost, of producing the coal. The opportunity cost is the lost return on the next best (marginal) investment that would have been obtained had the producer invested his capital resources elsewhere.

Because of market imperfections, the expected economic rent from coal production will always exceed the market price of the unmined coal. Only under conditions of perfect competition with no transaction costs, with numerous risk-neutral bidders having equal and perfect information and homogeneity (no cost efficiencies due to scale) and divisibility of the resource, would the rent and the FMV coincide. The economic rent is the maximum amount the government could expect to receive for a coal property.

While the statutory requirement for receipt of fair market value (FMV) for Federal coal offered for lease was not established until the passage of the Federal Coal Leasing Amendment Act of 1976, the Department prior to 1976 used a variety of methods to judge the acceptability of bonus bids at competitive sales. Originally, the adequacy of bids was determined by the area mining supervisor of the U.S. Geological Survey (GS). In 1971, a standard method of evaluation was adopted by the GS, generally known as the "K-factor" method. This technique used a simple straightforward formula to estimate minimum acceptable bonuses, and was sensitive to the thickness of the coal, its depth, its heat content, and its coking qualities.

In 1976 the GS adopted the two evaluation methods which are currently in use to estimate the present value of lease tracts. The first method, discounted cash flow analysis (DCF), involves estimating the future periodic revenues from selling mined coal, subtracting the investment and operating costs, taxes and other items, and discounting the results to reflect that the dollars earned in the future are worth less than the same amount of dollars in hand today.

The second method is the use of comparable sales analysis. This method involves researching recent market transactions of similar properties, verifying the terms of discovered transactions, and correlating these values in light of differences between the market transactions and the Federal lease tract.

Based on the results of the discounted cash flow and market data analyses, the GS then makes a recommendation to the Bureau of Land Management (BLM) regarding the minimum acceptable bids. The GS recommendation is treated by BLM as the estimate of FMV although it is an estimate of the rent and not necessarily the FMV. A high bid received at a competitive auction is accepted if equal to or higher than the GS estimate of rent, or rejected if lower.

The preferred method for estimating FMV is in fact the market data (comparable sales approach), although accepted Departmental FMV appraisal standards direct that all appropriate evaluation methods be used to come to a final estimate of FMV.

Recent evaluations by the GS have almost exclusively relied on the discounted cash flow approach, because comparable market transaction data were thought to be unavailable. The question of the availability and usefulness of these data has been somewhat controversial. The FMV task force investigated the availability and usefulness of market data, and found that while regional variations exist, market data can be discovered and verified. There is still a remaining question of correlating market data to individual Federal lease tracts which can only be answered on a case-by-case basis.

A broader consideration regarding usefulness of market data remains. The Federal government because it directly controls over 60 percent of coal lands in the western States, and because it indirectly controls another 15 to 20 percent of coal lands due to checkerboard and scattered ownership patterns, could become the price leader in the market for western coal. This leadership position would mean that prices paid in comparable coal lands transactions could be somewhat influenced by prices actually received for new Federal competitive coal leases. Therefore, reliance on the market data approach to FMV would in the long run reflect our own independently formulated pricing policies.

The potential drawbacks in applying the market data approach precludes the Department from relying solely on that approach. The DCF approach to value must therefore continue to play a major role in the Department's efforts to determine FMV. The DCF approach to value, however, is also subject to several weaknesses. The DCF estimate is an estimate of the rent; thus, it can result in an estimate that greatly overstates the selling price for a coal lease. It relies on uncertain assumptions of future costs and prices. It further relies on assumptions of when production will actually commence and that production can be maintained at existing levels..

If the Federal Government can develop a more perfectly competitive market than the private comparable sales market, then the high bid received for a coal lease in the Federal market would represent the best measure of its FMV available.

The value of Federal coal under private land of surface owners qualified under the Surface Mining Control and Reclamation Act is a function of the amounts that successful lessees would pay for consent. The Department desires to ensure a fair return to the public for its coal and to maintain competition. This would be done by allowing in the calculation of minimum acceptable bids only for the FMV of surface estate damages and costs. Appraisal of FMV of damages and costs of surface may be difficult when market data shows payments to surface owners based on royalties from Federal coal. The FMV task force addressed several alternatives for dealing with this problem in both the income and market data approaches to FMV of the coal.

Small Tracts

Several problems in determining FMV have been discussed. One geographic situation often encountered when determining FMV sometimes results in the exacerbation of most of the other problems. This situation is that of leasing small tracts.

A small tract is defined for the purposes of this report as a parcel of coal which by itself probably would not support an independent mining operation, or a parcel which could be developed more efficiently (at a lower cost per ton) as part of a larger unit. Tracts of this nature have been offered for lease under the NRDC v. Hughes order, and under earlier versions of the short-term criteria. They will likely continue to be offered under both the long term and emergency leasing components of the Federal coal management program.

The Department's recent competitive small tract leasing has had varying success. Since the establishment of the initial version of the short term criteria in 1973, sixteen small tracts have been offered for competitive lease. These small tract offerings did not attract much competitive bidding (i.e., two or more bidders) because one bidder generally had a highly superior position relative to other potential bidders. This position arose from the superior bidder's ownership of adjoining coal (often including an existing mining operation), control of access, or control or ownership of the surface overlying the coal.

This lack of competition means there is little reliable market data on which to judge the reasonableness of the government's FMV estimates. It is difficult to judge whether the estimated FMV is too high or low for any given tract. If the one bidder meets the minimum acceptable bid there is no way of knowing whether he would have bid higher if he had been expecting competition or if he passed through the bid amount to the coal consumer. If the one bidder does not meet the minimum acceptable bid, it may have been due to considerations by the bidder of which the estimators

of FMV knew nothing or the bidder may have had ulterior motives which the Government should not have considered anyway. In the case of a single bidder on small tracts, the Department must simply make its best estimate of FMV and presume it is correct. However, a balancing of rent capture (as long as FMV capture is assured) against other leasing goals, such as resource conservation, is possible.

Unfortunately, the problems encountered in estimating FMV for small tracts are substantial. Comparable sales information can vary considerably. An operator who does not absolutely need a particular private tract may know that the owner must sell to him or no one and therefore will offer little for the tract. If an operator must have a small tract he may be willing to pay an exorbitant price to protect his investment in the rest of the mining unit. The results of a comparable sales analysis might vary substantially depending on which of the two situations had been prevalent during the time period studied.

Use of the DCF approach to value also is more difficult to apply for small tracts. The tract, in and of itself, may have no value according to a DCF analysis. In fact, to qualify as a by-pass this must be the case. This means the value of the tract in relation to surrounding tracts with which it may be mined must be considered. What mining unit boundaries should be used and what percentage of the value of the mining unit should be attributed to the small tract? It can be readily seen that estimating the FMV of small tracts is subject to considerable uncertainty.

Unfortunately, small tracts present an additional special problem over and above the estimation of FMV. Many small tracts adjoin ongoing operations which sell coal under long-term contracts negotiated in the past. In this situation it may be difficult to capture revenue equalling an estimate of FMV based on today's market price for coal, but to do otherwise constitutes a subsidy of the coal user.

If an existing contract allows the pass through of royalties and not bonus bid payments to the customer, then the only way the government can capture producer rent is through the bonus (or taxes). However, many of the small tract lease sales have been offered and accepted with high royalties to avoid losing sales because of the inability of a company holding a contract to deliver coal to pay the full bonus amount. There is a drawback to this approach. If other non-Federal leases in the area contain provisions for escalation of royalties to match the highest Federal royalty, new high Federal royalties force up the price of more of the coal mined in that area than just that involved in the Federal sale. For those sales where the Department specifies higher bonuses and lower royalties to avoid this phenomenon, the bidders may not be able to pass through the increased costs and therefore may not bid. In sum, then, the Federal government is put in the position of accepting less than the full rent or risking by pass sales failures or local coal price increases.

Most of the Department's leasing actions for the last 6 years have involved small tracts. Until such time as a new long term leasing system is in full operation most of our lease actions will continue to be small tract oriented. In those areas where Federal coal ownership is limited or interspersed with non-Federal or previously leased Federal coal, there will continue to be small tract problems within the long-term system. It is therefore critical that the Department develop adequate methods for addressing small tract problems.

Recommendations

The task force on fair market value developed a number of recommendations for changes in current procedures and for further studies of problem areas. These recommendations and further studies include:

- (1) - To the extent possible and in a cost-effective fashion, develop a marketplace for Federal coal leases that attracts more than one bidder per tract. Competition is the surest way to

capture producer rents (surplus profits). A rent capture policy without a competitive market-place would likely conflict with other objectives of the program, namely resource conservation and meeting the requirements of the National Energy Plan. Concepts currently under study within the Department which would likely increase the extent of competition include intertract bidding, guaranteed legal access to lease tracts, and offering Federal coal tracts in units including adjoining non-Federal coal. The results of these studies should be closely watched and the necessary support provided to them.

- (2) - Major efforts should be made to improve present methods for evaluating small tracts.
- (3) - As part of the normal process for conducting sales, public comment should be solicited on the elements of the evaluation procedures which affect estimates of FMV. These comments should be considered prior to commencement of evaluations.
- (4) - A detailed study should be made based on industry records, of the rate at which anticipated cash flows from mining should be discounted to present value together with a study of the conceptual relationships of the risk, inflation, financial, and real return components of discount rates.
- (5) - The CREV income approach lease value estimate should be supplemented with a documented comparable sales lease value estimate. In each case the usefulness of market data would be determined and documented on an appraisal-by-appraisal basis.

- (6) - As a priority item, the uncertainties inherent in the government's income and market approaches to evaluation of FMV should be more rigorously investigated.
- (7) - Inflation of coal prices and coal mining costs should be incorporated into the DCF approach to estimating FMV. Methods should be developed to account for the effects of inflation on the elements of the DCF model, particularly the effect on depreciation tax credits.
- (8) - Potential double counting of royalties (calculating royalties on prices which already include royalties) should be recognized in estimating coal prices to be used in DCF estimates of FMV; this could occur when the sample of market prices includes prices which include royalty passthrough components. Methods should be developed for adjusting current coal prices for applicable royalty rate where coal contracts contain royalty passthrough provisions.
- (9) - The FMV of the damages to a qualified surface owner should be based on market value of similar surface estates and damages in non-coal areas; use of market data from non-coal areas would eliminate the consideration of royalties to the surface owner as an element of FMV of damages and costs; this approach should be incorporated immediately into tract evaluation methodologies.
- (10) - The appraisal of FMV of all competitive leases should be documented leases; such documentation should not reveal any proprietary data but, otherwise, should be detailed enough to allow reconfirmation of decisions and, further, should be placed in lease case files after leases are issued.

- (11) - The general practice on new leases of capturing FMV through increased royalties instead of increased bonuses should be discouraged; however, it might be retained for possible application to PRLAs and possibly to readjustments and emergency leases.
- (12) - Development guidelines should be developed for a possible bid-acceptance (reservation price) procedure similar to that used for OCS sales.
- (13) - Industry and public participation information and views on the fair market value process should be sought and applied to the studies recommended above.
- (14) - The Office of Coal Leasing, Planning, and Coordination should continue oversight responsibilities for the above studies.

Should the results of further studies recommended herein indicate restructuring or clarification of agencies' responsibilities, the appropriate documents would be reconsidered to formalize this restructuring.

Decision:

In the decision table, the Secretary is being asked to consider signing the following statement.

"I have reviewed the draft proposals and recommendations of the fair market value task force. I have no objection to these proposals and recommendations, however the task force should continue its studies under the supervision of the

Office of Coal Leasing, Planning and Coordination in order to develop a consensus on implementation of these recommendations before remanding them to the appropriate offices and bureaus or implementation."

Secretary

I desire to personally review proposed implementation actions resulting from the following recommendation(s):

**FAIR MARKET VALUE, ECONOMIC RENT,
AND FEDERAL COAL LEASING**

**Donald J. Bieniewicz
Office of Policy Analysis
U.S. Department of the Interior
Revised Draft: October 17, 1979**

V-12

I. INTRODUCTION

One of the principal tasks of the fair market value task force is to communicate an understanding of the basic concepts, legal requirements, and policy goals related to fair market value in Federal coal leasing. This is the primary purpose of this paper. Also provided are: a review of the fundamental methods available to the government for achieving these legal requirements and policy goals; an examination of Federal lease market design in practice; and an overview of the use of reservation prices in Federal coal leasing.

II. THE BASIC CONCEPTS AND THEIR RELATIONSHIP

Fair Market Value

According to the Federal Coal Leasing Amendments Act (FCLAA) of 1976, Federal lands offered for coal leasing must be sold via competitive bidding and "No bid shall be accepted which is less than the fair market value, as determined by the Secretary [of the Interior], of the [in situ] coal subject to the lease". Thus, the receipt of fair market value is a legal requirement in Federal coal leasing. Unfortunately, confusion has arisen about the meaning of the term "fair market value". This is partly because of its use by various authors in the literature on mineral leasing to describe what price the government should seek to obtain as a leasing goal, rather than what price it must obtain as a minimum legal requirement.

Fortunately, this confusion concerning the definition of fair market value does not extend into the legal arena. The courts have established the legal definition of fair market value within the body of law dealing with the condemnation of real property by the government under the power of eminent domain.

"Under established law, the criterion for just compensation is the fair market value of the property at the time of taking. 'Fair market value' is defined as the amount in cash, or on terms reasonably equivalent to cash, for which in all probability the property would be sold by a knowledgeable owner willing but not obligated to sell to a knowledgeable purchaser who desired but is not obligated to buy. ... This market value which is sought is not merely theoretical or hypothetical but it represents, insofar as it is possible to estimate it, the actual selling price. As has been judicially declared: 'It is well recognized that where private property is taken for public use, and there is a market price prevailing at the time and place of taking, that price is just compensation.' ... But the measure of compensation is not changed by the lack of active trading. The objective to be reached remains the same, i.e., the price for which the tract in question would sell.**

* Reference 1, pp. 3-5.

Thus, if there is an established market price for a property, then this is its fair market value. If there is no established market price for a property, then an appraiser's estimate of the market price is used, instead. The appraisal methods by which this market price is estimated are also well established in law and are documented in the 1973 report of the Interagency Land Acquisition Conference entitled "Uniform Appraisal Standards for Federal Land Acquisitions." In the appropriation of private lands by the Federal Government, it is the government's appraisal of the market price that legally determines the fair market value. Moreover, the FCLAA of 1976 makes it clear that the determination of fair market value is the responsibility of the government in Federal coal leasing, as well, and specifically identifies the Secretary of the Interior as the government agent responsible. Furthermore, the U.S. Department of the Interior's Departmental Manual states that the 1973 Uniform Appraisal Standards should be used "as a guide by all bureaus and offices" within the Department and that "the appraisal standards are equally applicable to those bureaus that dispose of property on behalf of the United States" (emphasis added).^{*} Thus, a definition of "fair market value" in Federal coal leasing as "the federally appraised market price of the in-situ coal offered for lease" is fully consistent with the current legal and Departmental usage of the term, and will be our accepted definition in the remainder of the paper.

^{*} Reference 2.

There are three principal approaches identified in the Uniform Appraisal Standards for evaluating the market price of a property. These are the comparable sales approach, the income or earnings approach, and the cost approach. Of the three, the comparable sales approach is, where feasible, the preferred method.

In the comparable sales method, a study of "arms length transactions in lands in the vicinity of those taken at about the time of taking" are made. This method is greatly preferred because "it is the only approach to value that reflects the balance of supply and demand in the market place."* In fact, it is the only one of the three methods that directly estimates the market price. Unfortunately, comparable sales data may not be readily available for use in Federal coal lease fair market value determinations.

In the cost approach, the cost of reproducing the item is estimated. This approach is "generally considered to be the least accurate indicator of value" and "the least reliable method of valuation." Also, "the courts have made clear that this approach should never be used 'when no one would think of reproducing the property.'""** This approach has no meaning within the context of Federal coal lease evaluation.

* Reference 1, p. 9.

** Ibid., p.11.

In the income or earnings approach, the worth of an investment-type property is estimated via a discounted cash flow model of projected future earnings. Federal coal leases are investments of the type that can be evaluated with this approach. In effect, this approach is a comparable sales approach, one step removed. In Federal coal leasing, the fair market value we wish to determine is the market price of the coal in situ, i.e., in place in the ground. But there may be no comparable sales data available on the selling price of in-situ coal in the area of the lease sale. However, there may be data available on the selling price of produced coal in the area, and on the cost of coal production in the area. In this case, the price of produced coal and the cost of production can be used in a discounted cash flow model to estimate the net present worth of the Federal coal lease. However, this net present worth is not a direct estimate of the market price of the in-situ coal subject to the lease. In fact, it is a direct estimate of the economic rent of the lease, a value which may greatly exceed the market price of a lease for the in-situ coal.

Economic Rent

"Economic rent," sometimes referred to as "producer surplus" or "excess profits," is a term that comes from classical economic market theory. In coal property evaluation, economic rent is the present value difference between the market price of the mined coal and the costs of producing the coal.* It can also be thought of as the excess

* These costs include opportunity cost which is the lost return on the next best (marginal) investment that would have been obtained had the producer invested his capital resources elsewhere. The opportunity cost is accounted for by calculating the rent in present value terms using the rate of return on displaced investments as the discount rate.

return to a factor of production beyond that needed to bring it into use. The importance of this concept is that under ideal market conditions, the market price for a Federal coal lease would be equal to the economic rent.

Such an ideal market would be perfectly competitive with the following characteristics: numerous risk-neutral* competitors, all equally competent; economic rent not dependent on the winner of the lease; and all competitors having equal access to information about the value of the lease. Several additional market conditions needed for the market price and the rent to coincide are: a deterministic (non-random) rent; no estimation error in competitors' rent estimates; and no costs of entering the market. However, these latter market conditions do not hold in the real world.

Because economic rent will depend on such random factors as future prices and production costs, the economic rent will be probabilistic rather than deterministic. If this was the only market flaw, then the market price would coincide with the expected, or weighted average, rent, rather than with the actual rent that will obtain.

Because of incomplete and differing knowledge of the factors affecting economic rent, competitors' rent estimates will surely differ, with none correctly equaling the actual rent. Thus, on some tracts the

* A risk-neutral competitor is a party who, when the economic rent is subject to random factors, will bid as if the economic rent is not subject to random factors and is exactly equal to the average economic rent.

market price may be too high, and on others, too low. At best, the market price would equal the economic rent only on the average.

In the real world, there are always costs of entering a market including the costs of information gathering, rent estimation, and bid entry. We will call these combined costs the "bid preparation costs." If a competitor wishes to obtain a normal rate of return on his capital investments, he must be able to recover these costs from the profits he makes on the leases he wins. Thus, a bidder will reduce the amount he would otherwise pay for a lease by the total costs of bid preparation he must expend in order to win the lease.*

Together, these market conditions will cause the perfectly competitive market price of a Federal coal lease to equal, on the average, the expected economic rent less the total costs of bid preparation expended to win the lease. Because this is the highest price at which a Federal lease would still be favored by industry over alternative private investments, it is the upper bound on the amount the government can endeavor to receive for a Federal coal lease.**

* Reference 3.

** Note that this is not unqualifiably correct if a lease can be sold using contingency payments, such as royalties or profit-shares (see the footnote on page 11). In such a case, the upper bound on the amount a bidder would be willing to pay is the actual rent, which may be more or less than the expected rent. However, at the time of a sale, the contingency payments must be estimated on an expected value basis, because the actual outcomes upon which they will be determined are probabilistic. Thus in terms of expected government receipts, the above statement remains valid even when contingency payments are possible.

III. FEDERAL LEASING GOALS AND METHODS

As the number of competitors in a market decreases, bidding theory suggests that the winning bidder will obtain an increasing share of the rent.* In fact, when the number of competitors equals one, the market price will drop to zero, if the seller remains willing to sell at this price.** In fact, it is often the case that only a single firm is interested in any specific Federal coal lease. It is presumably because of this factor that Congress put the requirement in the FCLAA of 1976, that no Federal coal lease can be sold for less than its fair market value (FMV).

However, there are other Federal leasing goals that may be relevant to Federal coal lease pricing policy. These can be summarized as follows: promotion of national economic efficiency in the development of the resource (e.g., timely development of the resource otherwise known as resource conservation, and promotion of competition in the coal industry); an equitable sharing of the value of production between

* To simplify the exposition we will henceforth refer to the price obtained in a perfectly competitive market as the "rent," instead of the more proper "expected rent less bid preparation costs," except when the distinction is relevant to the discussion at hand.

** A low number of bids received for a Federal mineral lease is not necessarily evidence of an uncompetitive market; rather, it may suggest that the tract is of generally low value in relation to the cost of preparing a bid for the lease. See reference 3.

the public and producers; environmental protection; socioeconomic responsibility; and national security (national energy supply) considerations. Achieving a favorable balance between these sometimes conflicting objectives lies at the heart of most public mineral leasing issues. It is worthwhile to examine these goals individually to see which are relevant to the question of what price the government should seek to obtain for its coal leases.

A number of analysts have recommended that an ideal Federal mineral leasing system would maximize the economic rent of the mineral leases, and would capture this entire economic rent for the public.* Maximization of the economic rent is argued to be in the interest of national economic efficiency. Capture of the entire economic rent is argued to be the natural goal of a proprietor seeking the highest possible price for the use of his land. These are not inherently conflicting goals. Economic theory suggests that the optimal production plan on a lease is the same regardless of the distribution of the rent between the lessor and the lessee. However, the tools of rent capture are often imperfect and may cause the total rent to be reduced. Before we continue, let us review the methods by which the government can meet its legal obligation to capture FNV, and seek the policy goal of rent capture.

* See reference 11.

As was indicated earlier, fair market value is defined in the Uniform Appraisal Standards as "the amount...for which in all probability the property would be sold by a knowledgeable seller willing but not obligated to sell to a knowledgeable purchaser who desired but is not obligated to buy." There are several ways by which the government can be a knowledgeable seller that would result in FMV receipt or better.

The first method is for the government to appraise the FMV of the lease, usually via a comparable sales method, and then set the minimum acceptable bid, known as the reservation price, equal to the appraisal. This ensures that any high bid accepted will be greater than or equal to the FMV.

A second method is for the government to estimate the expected economic rent of each lease, as well as to appraise its FMV. Then each lease's reservation price can be set by the government higher than the appraised FMV, but lower than the estimated rent, in order to capture a larger share of each lease's rent. Why the reservation price should not be set equal to the government's estimate of the rent will be discussed later in the paper.

A third method is for the government to design a market for selling Federal coal leases that is superior in its competitive aspects to any comparable coal lease market. If such a superior Federal market was developed, then the high bid offered for a Federal coal lease would be, by definition, its FMV, because it would be the most suitable market price upon which to base an appraisal determination of FMV.

A fourth method is to combine the last two methods; i.e., to design a Federal coal lease market that is at least as good as any comparable coal lease market, but to use reservation prices based on the government's expected rent estimates as well. The utilization of reservation prices, by adding an additional competitive element, tends to push each tract's FHV high-bid upward, closer to the economic rent.

A fifth method by which the government can be a knowledgeable seller is for it to use a leasing system that captures much of the economic rent (and FHV) in downstream payments, such as royalties or profit shares,* instead of in the up-front cash bonus payment. This method could be combined with any of the up-front payment methods previously discussed and in-so-doing would reduce the rent-capture burden placed on these other methods. Unfortunately, there are two general types of problems associated with the use of contingency payments: one, because royalties are seen by producers as production costs, their utilization as a rent-capture tool tends to reduce the total rent by inducing lower rates of production and lesser total production than would otherwise obtain. Two, such downstream payments can increase the price of the produced resource. This second problem is of particular concern in Federal coal leasing.

* A royalty, or excise tax, is a share of the gross value of production. A profit share is a share of production value net of costs. These are sometimes referred to as "contingency" payments, because they depend on an outcome that may or may not occur.

For example, in attempting to increase rent capture by increasing the Federal royalty rate, one should be aware of the following:

- The rapid rise in world oil prices since 1973, shortages of natural gas, and problems in the nuclear power industry have resulted in both an increase in the demand for coal and a decrease in the elasticity (i.e., the sensitivity of the quantity demanded to price changes) for coal to be used in new electrical power generating plants.*
- To the extent that private coal royalty rates are keyed to the Federal coal royalty rate, and demand for coal is inelastic, a uniform increase in the Federal coal royalty rate tends to induce an equivalent increase in the price of U.S. coal. What this means is that the increased royalty payments may be passed along to coal buyers as a price increase, and ultimately borne by consumers in the form of higher electricity costs.**
- To the extent that private coal royalty rates are not keyed to the Federal coal royalty rate, and demand for coal is inelastic, private coal tends to be more attractive to producers than Federal coal as the royalty rate on Federal coal rises. This means that increasing the Federal coal

* See reference 10.

** We have been informed by industry sources that this pass-along has occurred on short-term Federal coal leases sold with higher than 12 1/2% royalty rates.

royalty rate may induce greater production of private coal having potentially higher environmental costs than the screened Federal coal offered for lease.

- By raising the price of this Nation's coal, a higher Federal coal royalty rate would tend to reduce U.S. coal exports and to increase coal imports.

Because of these problems, it may be undesirable to use a royalty rate higher than the legally mandated minimum of 12 1/2% as a rent-capture tool in Federal coal leasing.* However, in theory at least, by adding a fixed profit share to the leasing system, higher contingency payments could be obtained without significantly distorting the price of produced coal, although at some additional administrative cost.

The above analysis of the use of the royalty rate as a rent-capture tool reveals a problem with the suggested leasing goal of rent maximization. In fact, if national economic efficiency is desired, then maximization of economic rent plus consumer surplus is the proper leasing goal. Consumer surplus is the value difference between the amount that buyers are willing to pay, and the amount that they actually have to pay, to obtain their purchases. By using a higher royalty rate on Federal coal, the government would be increasing (and capturing)

* This legal minimum applies only to surface-mined coal. The current royalty rate on underground-mined coal is set at 8% by DOI policy.

the economic rent of coal producers, but by increasing the price of coal it would be decreasing the consumer surplus of coal purchasers. However, where the price of the mineral being leased is not affected by government leasing policy, consideration of consumer surplus is not necessary. This is the case in Federal Outer Continental Shelf (OCS) oil and gas leasing, where the price of crude oil is determined essentially by OPEC pricing and production policies. This explains the usual policy recommendation that maximization of economic rent should be a government mineral leasing goal, because most of the analyses supporting this recommendation have been based on the OCS or other oil lease markets.

The commonly associated recommendation that the government should seek to capture the entire economic rent should also be somewhat qualified. The policy argument is based on classical economic theory which suggests that economic rent is a surplus, whose capture would not affect output decisions or the selling price of the produced mineral. However, capture of the entire economic rent, where the rent is measured based on the price of coal seen in the market prior to the lease sale, removes the potential for Federal coal producers to underprice their competitors as a market-entering strategy. In other words, where rents exist in a system, there is an opportunity for prices to go down. Where there are no rents, this opportunity does not exist. So in a dynamic sense, rent capture by the government can affect prices. However, because the government will not be able to capture the entire rent, and the government does not control the

entire national coal supply, the natural dynamics of prices in the Nation's coal markets are unlikely to be significantly compromised by a Federal rent capture goal.

Also, for some hard-to-find minerals, exploration and technology development costs not directly related to the actual mineral development may have to be recovered from the economic rent of producible finds. It may properly be argued, however, that economic rent is poorly defined in the above case, and that such exploration and technology development costs should be included in the cost base when computing the rent. Because coal is a relatively common mineral, and has a mature mining technology, non-specific exploration costs and technology development costs can probably be safely assumed to be insignificant when estimating coal lease rents, or these costs can be included under production costs as overhead.

Let us complete our review of Federal coal leasing policy goals to see if there are any other potential conflicts with a rent-capture goal. The remaining goals to be discussed are environmental protection, socioeconomic responsibility, and national security considerations.

It can be assumed that tracts offered within the current coal management system will have passed an environmental screening and ranking, and that whatever additional environmental protection is deemed necessary is provided through lease stipulation and regulatory monitoring. It can also be assumed that socioeconomic factors, such as boom-town effects, will be considered in the determination of regional Federal coal leasing

targets. Under these circumstances, there is no general conflict of a Federal rent-capture goal with Federal goals of environmental protection and socioeconomic responsibility.

Because domestic coal can substitute for imported oil to fuel domestic electrical power generating plants, the leasing of Federal coal has national security implications. However, unless the method selected by the government to capture rent has the unlikely effect of preventing the government from achieving its coal leasing targets, there should be no significant conflict of a rent capture goal with the government's national security goals.

Thus, it appears that a rent-capture goal would not significantly conflict with any other Federal coal leasing goal, assuming no rent capture methods are used that would distort the price of produced coal. At a minimum, capture of a share of the rent equal to the FMV is legally required.

IV. FMV IN PUBLIC TAKINGS VS. FMV IN PUBLIC SALES

As developed within the context of public takings, the principles of FMV tend to modestly favor the "public" over the private interest. For example, the Uniform Appraisal Standards state that if there is "a market price prevailing at the time and place of taking, [then] that price is just compensation." This allows the government to "buy" a property without having to pay "the enhanced price which its

demand alone has created.** Nor may personal measures of worth, e.g., sentimental value, be considered in estimating the FMV of the taken goods. Also, some consequential private costs of the taking, e.g., moving costs, cannot be included in determining "just compensation."**

As stated above, principles of FMV tend to favor the government in cases where the government is the "buyer," e.g., in condemnations. However, when the Federal government is the seller instead of the buyer, the public is not so well-served by a definition of FMV that tends to favor the buyer. Among the difficulties associated with the definition of FMV and its use as a fixed minimum selling price in Federal coal lease sales are:

- the implied assumption that the market price is not affected by the sale of the leases being appraised. Federal coal lease sales may have a considerable impact on coal lease prices.
- the treatment of the FMV as a certain value. A proper bid acceptance decision rule should consider the quality of the market price estimate used to determine the FMV, otherwise bids may be inappropriately rejected.
- the rigid requirement of full FMV payment. This does not allow the Secretary the flexibility to consider any other measure of

* See reference 1, pages 4 and 17.

** The government is becoming increasingly responsive to the fact that a government condemnation proceeding is more a "willing buyer-unwilling seller" situation than a "willing buyer-willing seller" situation. For example, the National Park Service now provides resettlement compensation for families living within the boundaries of a National Park whose homes are taken by the government. However, this resettlement compensation is evaluated and paid separately, and is not considered to be part of the FMV compensation for the property.

the social benefits of bid acceptance, such as timely development of the resource, if the high bid should fall below the FMV.

- the sensitivity of the market price, and thus the FMV, to existing market imperfections. These imperfections are just those items that dictate that the market price of a lease is less than the economic rent in the real world, i.e., lack of numerous risk-neutral bidders, etc. The use of an imperfect-market-based FMV as the reservation price may cause the government to sell a coal property for far less than the expected economic rent of the property.

The sensitivity of the market price of a coal lease to market imperfections, however, also represents an opportunity for the government. In public takings, there is only one market upon which to base an FMV determination and this market cannot be modified by the "seller" to obtain a better market price, i.e., a better FMV, for his taken property. However, in Federal coal lease sales there are two markets upon which to base an FMV appraisal — the existing private coal lease market and the Federal coal lease auction market — and the latter market can be modified by the government to reduce some of the anti-competitive distortions that exist in the private coal lease market to the point where prices generated in the Federal coal lease market may generally exceed those in the private market. In such a case, most of the concerns associated with the use of the FMV as the reservation price in Federal coal lease sales would be allayed.

If the Federal government can develop a market that is more competitive than the best comparable private coal lease market, then the high bid received for a Federal coal lease would be the best available measure of its market price, and thus of its FMV. The legal requirement for obtaining FMV would be met automatically, and the administrative cost of a presale comparable-sales-based appraisal could be saved. In such a case, a presale appraisal would serve only to reassure us that the high bid was indeed the best FMV estimator available. The problems noted earlier, concerning inappropriate rejection of offers for not having achieved FMV, e.g., from the government's overestimation of the market price in determining the FMV, would be eliminated. Best of all, the market price achieved in the Federal coal lease market, which is now synonymous with the FMV, would be generally increased so that the government would capture a greater portion of the expected economic rent of each leased property. Based on these observations, an obvious strategy is for the government to design a coal lease market that is as perfectly competitive as possible.

V. FEDERAL LEASE MARKET DESIGN IN PRACTICE

An example of an existing, competitive market design is the Federal Outer Continental Shelf (OCS) oil and gas lease market. The basic market is a sealed bid auction with a fixed royalty rate or schedule. There are numerous potential bidders, even though market entry costs, in terms of presale information gathering and analysis costs, the cash bonus payment, and postsale exploration costs, can range in the tens of millions of dollars.

The eight largest oil producing firms are precluded from joint bidding* with each other in order to maintain the size of the bidding pool and to somewhat equalize capital resources across bidders. Smaller firms are allowed to joint bid with these eight largest firms or with each other. In fact, some of the consortia of smaller firms have been very effective at winning leases.

On wildcat leases, information access is equally available to all potential bidders. Any firm is free to run seismic surveys. Presale stratigraphic drilling data is, by regulation, available to all who wish to purchase it.**

Although the division of hydrocarbon reservoirs by tract boundaries would normally cause a considerable reduction in lease value, this is averted in frontier areas by government mandated unitization of all reservoirs, and in previously leased areas by the legal right of any lessee to force unitization when his lease is being drained by another. Under a unitization plan, each reservoir is produced as a single economic unit with each lessee sharing in costs and profits

* Joint bidding is actually precluded among firms that exceed a specified rate of oil and gas production, rather than among the eight largest, per se.

** One minor flaw in this market is that besides selling mineral rights, the government is also selling information rights by allowing winning firms to keep secret for several years the drilling information on their leases. This gives firms who can drill into reservoirs that extend into adjacent tracts a major advantage over other bidders for these "drainage" tracts. But because all drilling information is turned over to the government, the government's reservation price can be set to force the adjacent owner to make a fair offering for the drainage tract. However, a better solution might be to simply require that all drilling information on Federal OCS lands be made public immediately, as a condition of the lease.

in relation to his lease's contribution to the economic worth of the unit. Thus, the value of the lease is independent of the winner of the lease.

Considerable uncertainty exists as to the actual amount of hydrocarbon resources present. However, because the basic trapping mechanisms are understood and can be identified through seismic analyses, probabilistic estimation of the rent value of a lease is feasible. This approach to rent estimation is used by both the government and industry.

In design, the Federal OCS oil and gas lease market approaches the theoretical requirements of a perfectly competitive market. Historically, it has shown itself to be highly competitive and to have effectively captured the economic rent of leased OCS properties for the public.*

An example of an existing, uncompetitive market is the short-term Federal coal lease market. Several auction design approaches have been used in attempts to improve this market:

- sealed bonus bid with fixed legal minimum royalty rate
- sealed bonus bid with fixed royalty rate adjusted upward to drive the Coal Resource Economic Value (CREV - the

* See reference 4.

government's estimate of the "most likely" rent value of the lease) to \$25/acre, the minimum acceptable bonus bid

- sealed-bonus bid followed by an oral auction.

Although there are numerous potential bidders for such coal leases, in most cases there is only one actual bidder. On-site information gathering costs are not particularly high compared to the OCS case; however, it may be impossible to gather information on contiguous coal deposits because of the scattered or checkerboard pattern of coal ownership in parts of the West. This ownership pattern, in combination with the large coal deposit size needed to achieve coal production scale economies, often causes Federal coal to be of value only to one potential bidder — the owner of the contiguous coal deposit. If the contiguous coal is in production, there should be little uncertainty concerning the salability (i.e., the price) or the production cost of the Federal coal, as evaluated by the contiguous coal owner. However, when for all practical purposes there is only a single potential bidder, then regardless of the auction design used, the market for a short-term Federal coal lease will not be competitive.

This fundamentally uncompetitive market structure will also be a major problem in long-term Federal coal leasing. One solution to this problem is for the Federal Government to sell its coal, together with nearby private coal, in units large enough to achieve coal

production cost efficiencies.* In such a unit, the Federal coal would now have roughly the same rent value to all competent coal-producing firms. Steps would also have to be taken to ensure equal availability of coal resource information to all potential bidders. Other possible governmental actions that would tend to create a competitive environment by increasing and equalizing lease value among potential bidders include: requiring transferable surface owner consent**; guaranteeing access rights for rail lines, roads, etc.***; and governmental brokerage of coal contracts to reduce price and contract uncertainty.

Another conceivable approach takes into consideration the fact that the government has much more coal than it wishes to sell. If there are many potential bidders, each capable of producing efficiently at least one of the many possible leases in an area, competition can be achieved by holding an "intertract" auction for the right of the high bidder to produce his most favored lease.**** Before each sale, the favored properties could be delineated by the government based on industry nominations, or could be delineated directly by the potential bidders. In the latter case, because of greater private manpower and information availability, the delineated

* See reference 5, chapter 5.

** This is a current Departmental policy.

*** A study on this subject is currently undergoing review within the Department.

**** Procedures for "intertract bidding" are currently being developed by an interagency, inter-Departmental task force.

tracts should have higher rents for capture by the government through its lease market.

VI. THE USE OF RESERVATION PRICES

An additional method by which the Federal Government can seek to obtain a larger share of the economic rent is for the government to become a player in the market. Based on its own estimate of the lease's rent and information from the lease auction itself, the government can set a "reservation price" for each lease, above which the high bid would be accepted, below which it would be rejected.

A general functional form for the reservation price would be KG , where G is the government's estimate of the expected rent, and K , ranging $0 < K < 1$ is a multiplier dependent on at least the following factors:^{*}

1. The United States Geological Survey (USGS) estimate of the expected rent, i.e., G .
2. The information content inherent in the submitted bids with regard to tract value.
3. The number of potential bidders and the number of actual bids received.
4. The social cost of bid rejection and the cost to the government of bid rejection.
5. The degree of estimation error in the rent estimates made by bidders and by the government.

* This list is a modification of a list appearing on p. 2 of reference 6.

6. The degree of risk aversion and the form of firms' bidding strategies.
7. The historical relationship between USGS' rent estimates and the high bids in the particular sale area under consideration.
8. Experience with rejected tracts that were subsequently reoffered for sale.
9. The effect of bid rejection criteria on bidding behavior.
10. The bargaining strength of the government.
11. The comparable sales analysis estimate of the market price, and the quality of the comparable sales data used.
12. Firms' bid preparation costs.
13. The government's other leasing goals, and its administrative costs of leasing.
14. Advantages held by private in-situ coal over Federal in-situ coal, such as its immediate availability to the market.
15. The demand for coal leases in the sale area.

Let us examine how K would depend on these factors. For example, as the number of bids received, i.e., the observed competition, went up, more dependence could be placed on the market to force the rent to be bid away, and less dependence would need to be placed on the government's expected rent estimate, G . Thus, as the number of bids increases, K should decrease.

In another example, as the degree of estimation error in G increases, as measured by its variance, the risk of inappropriate bid rejection increases. Thus, as the variance of G increases, K should decrease.

In addition, the relationship between bid value and downstream government revenues should also be considered in setting K . For example, because bonus payments are tax deductible, if a bid is strategically decreased by the bidder, then the tax deduction is reduced also, so that the government will gain greater tax revenues from leasing the property. Thus K could be set somewhat lower as compared to the case where bonus payments were not tax deductible.

In order to avoid ostensible arbitrariness in acceptance-rejection decisions, the procedures for combining the government's rent estimate and the sale information to determine K should be established presale and be made available to the public prior to the auction. Then, using these announced procedures, each lease's reservation price would be determined automatically after its sealed bids were opened. A major strength of this approach is that it enables essential bidding information to be incorporated into bid rejection decisions.

The utilization of reservation prices is a particularly useful counterstrategy when the number of bids is expected to be low and a bidder might attempt to win a property with a bid much lower than his evaluation of the property's worth. However, the more competitive the Federal lease market, the less there is to be gained through strategic bid rejection. In fact, the less dependence placed on this latter approach, the better, because of the additional costs it imposes on the leasing process. These costs include the administrative cost of rent estimation, and the social cost of not leasing tracts that should properly

be leased. Social costs may be in the form of bypassed or delayed production, induced production of environmentally and economically inferior coal, and reduced government revenues. These costs are caused by the inevitable presence of estimation error in Federal estimates of the expected rent, and by the quality of the procedure used to set reservation prices.

Design of a good reservation price procedure requires a comprehensive understanding of the benefits and costs of rejecting bids. This is an exceedingly complex subject. However, it is possible to develop reservation price-setting rules that are remarkably simple yet robust.

An example of a simple and effective reservation price procedure is that used in OCS lease sales. The OCS rules explicitly consider the first four theoretical factors for setting K as listed previously, and implicitly consider the fifth and seventh factors listed. The USGS estimate of the expected rent, the submitted bid values, the number of bidders, and the potential loss in government receipts are all direct components in the reservation price procedure. The degree of estimation error in the government's rent estimate also appears to be considered, but implicitly and without formula.*

* The sum of the USGS tract value estimates in an OCS lease sale is typically from 20 to 60 percent of the sum of the high bids. (See reference 7, Table 9). Thus G , on the average, tends to be less than the high bid. If we assume that the high bid is, on the average, equal to the expected economic rent, then the lower average level of G when compared to the high bid is equivalent to a reduction in K similar to that which could result from direct consideration of the government's estimation error.

Although the OCS reservation price procedure differs considerably in appearance from the theoretical form previously described, its functional properties are very similar, and, as applied, it appears to be remarkably close to ideal.*

However, the procedure used to reject bids in short-term Federal coal lease sales has potential for improvement. Only a single factor, the USGS estimate of the "most likely" rent, referred to as the Coal Resource Economic Value (CREV), is considered, and it is used directly as the reservation price. Even when only a single bid is received, as is commonly the case in short-term sales, consideration should also be given to the social cost of bid rejection and the degree of estimation error in the government's rent estimate, when setting a reservation price. There are several possible reasons why these factors are presently not explicitly considered. First, the social cost of bid rejection is different for coal than it is for offshore oil and gas, and the manner in which to trade-off this cost is considerably more complex.** Second, the degree of estimation error in the OCS rent estimate is handled implicitly in the OCS reservation price procedure, and thus its direct consideration in the Federal coal reservation price procedure has lacked visible precedent. Third,

* See references 6 and 8 for an explanation and an in-depth analysis of the OCS reservation price procedure.

** For example, if the government sets its reservation prices too high, firms may choose to bypass the Federal coal and this coal may be, in effect, lost to society.

because comparable sales data had been presumed to be generally available, the income approach, i.e., the CREV, is used to estimate the market price. Unfortunately, an incomplete understanding of the tendency for the income approach to overstate the market price of in-situ coal leases has led to the minimum acceptable bid being set exactly equal to the CREV.

Contrary to the situation on the OCS, the best means of showing that the legal requirement of FMV receipt is being met in short-term Federal coal lease sales would be via comparable sales-based appraisals. On the OCS this is unnecessary, because the Federal OCS lease market is highly competitive and represents the best, in fact the only, market suitable for evaluating the FMV of each leased tract. However, most short-term coal lease sales are not sufficiently competitive, having only a single potential bidder, to serve as a basis for internal appraisal determinations.

Because the government is in a stronger bargaining position than most private coal lease sellers, we should expect that the economically appropriate reservation price for a Federal coal lease would exceed the price that would be obtained by a private seller of a similar property. However, in no case would the reservation price equal the full expected rent estimate, because of the risk of inappropriate bid rejection from inaccuracy in the government's rent estimate.

An improved short-term coal lease sale procedure would be equally applicable to long-term Federal coal lease sales. However, comparable sales-based appraisals would no longer be needed if a highly competitive long-term Federal coal lease market is developed. Also, if intertract bidding is used, then the reservation price procedures should be modified so that each tract's reservation price would also be a function of competing bids received on other tracts offered in the sale.

Another strategy that could possibly increase rent capture is for the government to announce its estimate of each lease's expected rent before the sale. Such a presale announcement, by reducing the degree of estimation error in bidders' rent estimates, might tend to make the market more competitive. After the sale, the reservation price procedure could be used, as usual, for bid acceptance.

In the special case of only one eligible bidder, a simplification of the above strategy is possible. Because the bidding information obtained at the sale would have a very weak effect, if any, on the value of K , the reservation price could be determined prior to the sale. Thus, the government's reservation price, rather than the government's estimate of the expected rent, could be announced prior to the sale. The bidder would then know with certainty if his bid would be accepted, and would make fewer underbidding errors. This would allow the reservation price to be set somewhat higher than it would be set if the reservation price was not announced presale. An analysis for the case where the government

is an unbiased (i.e., tending to be correct on the average) estimator of rent, concluded that such a presale announcement would tend to increase government rent capture.*

VII. SUMMARY

In Federal coal leasing, fair market value (FMV) refers to the federally appraised market price of the unmined coal offered for lease, and represents the lower bound on the payment the government can legally accept in exchange for its property. Economic rent is defined as the present value difference between the market price of the mined coal, and the cost of producing the coal. Under ideal market conditions, the market price for a Federal coal lease would be equal to the economic rent; however, several of the necessary conditions, e.g., rent must not be a random variable, do not hold in the real world.

In theory, these inevitable non-ideal market conditions would cause the perfectly competitive market price of a Federal coal lease to equal, on the average, the expected present value economic rent less the bid preparation costs expended to win the lease. Because this represents the highest price at which a Federal lease would still be favored over alternative private investments, it is the upper bound on the amount the government can endeavor to receive through Federal lease market design, or otherwise, for its leases.

* See reference 9.

Besides the legal requirement that FMV must be received, there are several Federal leasing goals which may be relevant to Federal coal lease pricing policy, including: promotion of national economic efficiency in the development of the resource; an equitable sharing of the rent from production of a lease between the public and producers; environmental protection; socioeconomic responsibility; and national security (national energy supply) considerations.

It has been suggested that it would be in the interests of economic efficiency and equity to pursue as leasing policies the maximization of lease rents and the capture of these rents by the Federal Government.

In Federal coal leasing, this joint policy may need to be modified to exclude rent-capture methods that would increase the price of produced coal, e.g., the utilization of a royalty rate higher than the legal minimum of 12 1/2%. It is unlikely that a rent-capture goal in Federal coal leasing would significantly conflict with leasing goals of environmental protection, socioeconomic responsibility, and consideration of national energy needs which are met within the current coal management system via environmental screening and ranking of lease offerings, lease stipulations, regulatory monitoring, and the determination of regional Federal coal leasing targets.

There are several methods available to the government for the capture of FMV and rent in Federal coal leasing, including: use of a minimum acceptable bid, known as a reservation price, set equal to the comparable sales-appraised FMV; use of a reservation price set above

the appraised FMV, but below the government's estimate of the expected economic rent; use of a Federal coal lease market, superior in its competitive aspects to the market used for comparable-sales appraisals, to generate high bids greater than the prices observed in the comparable-sales market; use of a superior Federal coal lease market along with a reservation price whose magnitude is based on the government's estimate of expected rent; and lastly, use of a leasing system that captures much of the rent (and FMV) in downstream payments, e.g., royalties or profit shares, in combination with one of the above approaches. The use of a rent-estimate-based reservation price, in combination with a superior Federal coal lease market, offers the greatest advantages; however, because of problems in generating competition, at least in the short term, an appraisal based on comparable sales data is also advisable to ensure that FMV is received.

Within the context of public takings, the FMV of a property is not subject to control by the "seller," but is based on observations of previous similar transactions in the existing private market. However, within the context of Federal coal lease sales, the FMV is subject to control by the seller, the Federal Government, in that the government can design its coal lease market to reduce some of the anti-competitive distortions that exist in the private coal lease market to the point where prices generated in the Federal market may generally exceed those in the private market.

Although there are numerous potential bidders for each Federal coal lease, in most cases there is only one actual bidder. The scattered or checkerboard pattern of coal ownership in parts of the West, in combination with the large coal deposit size needed to achieve coal production scale economies, often causes Federal coal to be of value only to one potential bidder — the owner of the contiguous coal deposit. Potential solutions to this problem include presale unitization, i.e., the selling of the Federal coal along with nearby private coal in units large enough to achieve coal production cost efficiency; and intertract bidding, wherein the high bidder wins the right to produce his most favored lease of those offered by the government. Other possible governmental actions that would tend to create a competitive environment by increasing and equalizing lease value among potential bidders include: requiring transferable surface owner consent; guaranteeing access rights for rail lines, roads, etc.; and governmental brokerage of coal contracts to reduce price and contract uncertainty. Leasing strategies that may increase the share of the rent captured by the government include careful reservation price design, and selective presale announcement of Federal lease value estimates.

References

1. "Uniform Appraisal Standards for Federal Land Acquisitions," Interagency Land Acquisitions Conference Committee, 1973.
2. "Appraisal of Real Property," Part 602.1.1, Departmental Manual, U.S. Department of the Interior, Transmittal No. 1912, August 13, 1976.
3. "An Economic Analysis of Presale Exploration in Oil and Gas Lease Sales," Darius W. Gaskins, Jr. and Thomas J. Teisberg, from Essays on Industrial Organization in Honor of Joe S. Bain, Robert T. Mason and F. D. Qualls, eds., Cambridge, Massachusetts, 1976.
4. "Patterns of Bidding, Rates of Return and Ownership for OCS Oil and Gas Leases - A Presentation to the OCS Advisory Board," H. Theodore Heintz, Jr., Office of Policy Analysis, U.S. Department of the Interior, Washington, D.C., December 15, 1978.
5. "Enhancing Competition for Federal Coal Leases," Richard A. Clark, R.C. Lind and R. Smiley, prepared for the Office of Policy Analysis, U.S. Department of the Interior, Washington, D. C., January 1976.
6. "Analysis of Alternative Bid Acceptance Conditions for OCS Sales," Marshall Rose, Office of Policy Analysis, U.S. Department of the Interior, Washington, D.C., April 1, 1978.
7. SAD Section Report No. 77-26, "A Study of the Aggressive/Conservative Patterns of Bidders and Pre-Sale Evaluations: Federal Offshore Oil and Gas Lease Sales," Conservation Division, U.S. Geological Survey, July 15, 1977.
8. "Reservation Prices, Fair Market Value, and Bid Acceptance Rules for Future OCS Lease Sales," Marshall Rose, Office of Policy Analysis, U.S. Department of the Interior, Washington, D.C., November 7, 1978.
9. "Coal Tract Selection and Bidding System Option Paper - Appendix A - Revealing Reservation Prices," Thomas Teisberg and Robert H. Nelson, Office of Policy Analysis, U.S. Department of the Interior, Washington, D.C., May 5, 1978.
10. "Rent and Regulation in Unit-Train Rate Determination," Martin B. Zimmerman, *Bell Journal of Economics*, Spring 1979.
11. Mineral Leasing as an Instrument of Public Policy, Michael Crommelin and Andrew R. Thompson, eds., British Columbia Press, Vancouver, 1977.

The Key Issue in Federal Coal Lease-Pricing Policy

Donald J. Bieniewics
December 1979

There appears to be a large difference between the current long-term-contract price for mined coal and the estimated cost of producing coal on the best Federal coal lands which are soon to be made available to the market. As Federal coal leases become available in increasing number, the selling price of mined coal should drop in real terms as competition for coal production contracts drives higher cost coal from the market. Ultimately, because of the vast supply of low cost Federal coal, the contracted f.o.b. price* should again approach, as has been historically the case, the unit cost of production plus a minimal, competitively-determined rate of return on capital invested in coal production, with no excess profits (rents) in the system.** The key issue facing the Department is what Federal coal lease-pricing policy would be best to follow during this time period of decreasing real contracted f.o.b. prices wherein large rents may possibly exist on Federal coal leases.

Unfortunately, the traditional royalty and reservation price methods used by the Department to capture excess profits in Federal OCS oil and gas lease sales are unlikely to prove satisfactory for Federal coal lease sales for the following reasons:

- Regardless of the degree of excellence of the government's discounted cash flow coal lease rent-evaluation model, the correctness of the government's estimates of lease rents will be, at best, uncertain. This

* The price delivered "free on board" a railroad freight car.

** Electric Power Research Institute Report EA-497, "Coal Price Formation", December 1977.

is because the size of the rents is very sensitive to the f.o.b. price resulting from the lease sale — and this price is very uncertain. For example, if sufficient Federal coal is leased, the f.o.b. price could drop so far that, in theory at least, there may be no rents from coal production on the leases sold. However, if the quantity of Federal coal leased is not sufficient to drive all higher cost coal from the market, the resulting f.o.b. price could be anywhere between rock bottom at the production cost of the newly leased coal plus a minimal return on investment, and the much higher f.o.b. price seen prior to the sale. Unfortunately, satisfactory models for predicting a transitional f.o.b. price do not exist and are unlikely to be developable. Because of this, the government's estimates of lease rents could conceivably be off by several orders of magnitude.

- Whatever reservation prices are set will always appear to be correct. The degree of error in the government's estimates of lease rents used to set the reservation prices will not be revealed because bidders may pay whatever reservation prices are set. This is because of the tight control the Federal government has over a major part of the supply of the best western coal. As long as the reservation price is less than the difference between production cost (including an adequate return on investment) and the current f.o.b. price, it can be paid and the resource produced profitably. However, the f.o.b. price of such coal must be accordingly higher than it would be with lower reservation prices.

- In theory at least, social welfare maximization occurs at the point of competitive equilibrium of unrestricted national coal supply and demand.* At this point, the greatest amount of coal will be produced at the lowest possible cost and the f.o.b. contract price for coal will equal its production cost plus a minimal, competitively-determined rate of return on the capital invested in coal production. The use of royalties and reservation prices in an attempt to capture transitional rents will, at best, slow the movement towards this equilibrium f.o.b. price.
- Even worse, once high reservation prices and royalties are used, they may be locked into the system for an indefinitely long period, effectively halting movement towards the equilibrium f.o.b. price. Once obtained, high reservation prices could set a precedent for fair market value determinations in future Federal coal lease sales. Thereafter, the government may be legally bound to obtain payment for its leases at similarly high levels.

The basic weakness of the traditional royalty and reservation price approach is that it assumes that the price of the produced mineral is insensitive to the manner in which it is leased in-situ by the government. While this is a reasonable assumption for the leasing of Federal oil and gas properties, it appears to be inappropriate for the leasing of Federal coal properties. The rate of offering and method of pricing of Federal in-situ coal will have a dramatic effect on f.o.b. coal prices. Acknowledgement of the dynamic,

* Assuming insignificant external costs of coal extraction.

interactive nature of Federal coal lease-pricing methods and f.o.b. coal prices is essential to recognition of a superior Federal coal lease-pricing policy.

Based on this observation and consideration of what leasing approach would allow for unrestricted movement of the f.o.b. price towards its competitive equilibrium-determined minimum while providing the government with as large a share of the residual rents in the system as possible has lead to the following suggested policy:

- The Federal Government should rapidly offer the highest-quality, lowest-cost Federal coal tracts in each region in sufficient number to allow the amount of coal produced to be similar to that which would occur in an unrestricted market. The goal is to generate quickly postsale markets wherein f.o.b. coal prices would be determined based on the extraction costs of the new low-cost Federal coal with all rents squeezed into lower f.o.b. prices.
- The Federal government should work to ensure that coal from Federal leases is contracted to be sold at cost plus only a reasonable return on investment. One policy tool for such action is that the Federal government can require in its leases that produced coal be sold at "reasonable", i.e., presumably not exorbitant, prices. Due caution is advised here, though. It is best to rely on a competitive postsale market to determine what is a "reasonable" price or a reasonable return on investment. Additionally, there is strong evidence that utilities examine a potential producer's mining costs very carefully before awarding a contract; thus, purchase and production of Federal coal leases by

utilities is always an available option. We should expect that these factors will work to very quickly pull f.o.b. prices in line with the lower production costs on new Federal coal.

- By not utilizing reservation prices in an attempt to capture directly the quasi-rents which may temporarily exist, the Federal Government would obtain several benefits beyond that of allowing for further unrestricted downward movement of the f.o.b. price. First, the administrative cost of detailed tract evaluations would be saved. Second, approximately half of any excess profits that result, including excess profits on private coal developed in conjunction with the leased Federal coal, would be captured via Federal corporate income taxes. Third, several beneficial types of industry behavior may result. Firms are encouraged to buy Federal coal leases in order to capture these quasi-rents which would tend to raise the level of competition and the bid levels for offered Federal coal tracts. Also, the temporary existence of quasi-rents may induce a greater number of outside firms to enter the coal industry, strengthening its general competitiveness and resulting eventually in a lower competitively-determined "normal" rate of return on investment in the industry and lower f.o.b. prices to consumers than would occur in a less well-realized competitive market equilibrium.
- Tracts should be offered at no higher than the minimum legal royalty rate of 12.5% for surface coal and the current administratively-determined rate of 8% for underground coal. These royalty rates appear to exceed rates observed

in the private market for coal leases and thus would meet legal requirements for receipt of fair market value. Bonus payments obtained by private lessors are generally minimal. Higher than 12.5% royalty rates will tend to cause an even higher f.o.b. equilibrium price and are undesirable. Even at 12.5%, de facto incentives are provided for the development of non-Federal coal having higher production costs, and potentially higher environmental and socioeconomic costs, than the best Federal coal, but which can be sold for a lower f.o.b. price than the best Federal coal, because it can be leased and developed at a lower than 12.5% royalty rate. Thus, only if the cost of Federal coal production is significantly (equal to the full Federal royalty payment differential) lower than the cost of production on private coal would Federal coal have an edge in the lease market. If Federal coal at such royalty rates is capable of driving all other coal from the market, then the government's royalty receipts should be considered to be quasi-rents existing only because of its monopolistic power to withhold these Federal leases from the regional supply. It is likely that such quasi-rent royalty payments would greatly exceed any true differential rents caused by quality differences in the best Federal coal leasable within a region.

- If reservation prices that vary by tract must be utilized, then these reservation prices should be set directly equal to a highly conservative governmental estimate of the expected rent less estimated bid preparation costs. Although theory suggests that a proper reservation price should be less than the estimated expected rent (and we were able to identify numerous factors supporting this qualitative assessment and several policy tools by which such an adjustment could be made), the degree of adjustment necessary is unknown based on available data.

In this case, the only reasonable alternatives are either to discard the utilization of a differential reservation price approach, or to set such reservation prices based on highly conservative assumptions in the calculation of lease rents, i.e., low f.o.b. price, high production costs, and high discount rate. A suggested approach for estimating a conservative f.o.b. price will be presented subsequently. Based on available coal production cost data, a "high production costs" standard is readily developable. A conservative discount rate would be one based on the higher rates of return commonly utilized in coal project planning rather than on the average rate of return evidenced on completed projects or on the weighted average cost of capital to the industry.

- If reservation prices must be utilized, these reservation prices should aim to capture non-monopolistic rents only. The government's expected rent estimates should be calculated using an estimate of the equilibrium f.o.b. price in the sale region under the assumption that the supply of Federal coal was essentially unrestricted. This would tend to avoid reservation-price-caused locking-in of an f.o.b. price above the competitive equilibrium level.
- If a Federal coal lease sale is likely to meet the regional demand, then the f.o.b. price to use in estimating the expected rent of each tract offered is a conservative (low) estimate of the unit production cost (including estimated capital investment cost and a competitively-determined rate of return on invested capital) of the most-expensive-to-mine (as part of its logical production unit) Federal coal tract which is likely to be leased and produced. In general, assuming Federal

coal is the least-costly-to-mine coal in the region, then the equilibrium f.o.b. price can be estimated by the unit production cost of the marginal Federal mine ⁷ after Federal coal leasing drives all higher cost coal from the regional market.

- The government's estimate of tract value should yield to a truly competitive market determination of tract value. A bid-averaging rule, such as that used in Federal Outer Continental Shelf (OCS) oil and gas leasing, or a similar rule should be used to lower discounted cash flow-based reservation prices as the number of bids increases on a tract. This would greatly increase the robustness of any reservation price procedure utilized in Federal coal leasing.
- Where the administrative costs of lease evaluation and reservation price determination exceed the expected incremental rent-capture gain from these procedures, then the government should instead use a flat-rate minimum acceptable bonus bid, standardized for all such tracts in a sale, as the reservation price.
- Where adjacent private coal production is ongoing, such that bypassing a Federal tract would result in effective loss of the Federal resources, and royalty and bonus payments for the Federal lease would likely be passed through to the consumer rather than being paid from producer economic rents, then resource conservation should be the overriding concern and payment for the Federal lease should be set at the flat-rate minimum. Such tracts will likely also be within the class of tracts where the administrative costs of detailed lease evaluation outweigh the expected incremental rent-capture benefits.

- The government should make idle speculation costly in order to put the coal into the hands of those who wish to develop it. One possible method is to require the lessee to post a sizeable bond when he obtains a lease. This bond would be redeemable if the lease is produced but would be lost if it is not produced. The flat-rate minimum bonus payment or reservation price will also tend to filter out idle speculators but the bond adds an additional degree of control and post-sale incentive to produce. The importance of making non-diligence costly to a potential lease purchaser is that in such a situation the government cannot be accused of overleasing, i.e., of dumping coal, or putting too much Federal coal into the hands of idle speculators. If the costs of non-development are significant, once the projected demand for contract coal can be met by Federal coal already under lease in a region, firms will simply stop bidding on new Federal coal tract offerings until the likelihood of being able to bring newly purchased leases into production within the time limit for diligence again becomes acceptably high.

Some rents may still exist in the system, even if regional supply is unrestricted. Recent air-quality and reclamation laws have increased the demand for low-sulfur, low-reclamation-cost coal. Where there is only a limited quantity of such coal within a region, it will tend to command a higher price than less desirable coal even if production costs are similar. Some other potential causes of rent differences across Federal tracts include transportation, Btu quality and access differentials. Even if such rents may exist, it is arguable whether detailed evaluations are warranted considering the limited potential quality of even the most carefully calculated rent estimates, the capture via

royalty payments of most of the total rents, the tendency of residual rents to become consumer surplus via lower f.o.b. prices because of cost-based pricing by producers contracting to utilities, the capture of approximately half of any excess profits via corporate income taxes, and the potential capture of residual rents via the individual Federal coal lease auctions. However, alternative non-evaluative methods of rent capture may be cost-effective. Among these are the following:

- 1) A profit-share contingency payment which would tax only profits above a reasonable return on investment could be made a term of new Federal coal leases. Such a system has been developed for OCS leasing and will be tested in the near future. A similar system for Federal coal leasing appears to be feasible, and could possibly be evolved in less time than the two years spent on developing the OCS system; however, the benefits of such a system are not as certain in coal as in oil and gas leasing when weighed against the additional complexity and administrative cost it would add to the Federal coal management system.
- 2) Federal coal could be combined with adjacent private coal and offered together for lease as a complete and viable logical production unit. This "presale unitization" could result in very high levels of competition for such lease units. However, if Federal coal could be offered in quantity sufficient to drive lease rents to near zero, then it would be hard to argue that presale unitization could be cost-effective in terms of its incremental rent-capture benefits. Also, by limiting

Federal coal lease sales to those tracts on which presale unitization can be arranged, some of the best Federal coal may continue to be withheld from the market resulting in higher f.o.b. prices than would otherwise obtain. Furthermore, if the rents in the system are quite low, then an unmodified sale in which only a single firm is presumably interested in any particular Federal coal tract is preferable from the standpoint of having a lower level of socially wasteful redundant bid preparation costs.

- 3) An intertract auction could be held. This would be accomplished by adding several tracts to the lease sale beyond that number which would have been offered otherwise, but limiting the total number of leases to be sold to the original number. Presumably, all of the tracts offered would be of approximately equal coal quality and production cost. Bidders must then compete to keep their most favored tracts within the set of tracts that will be leased. The major strengths of this approach are that it could, at least in theory, provide a bonus payment on each tract leased that is at least equal to the rent value of the marginal tract leased, and that it can provide a market signal as to whether or not a sufficient number of tracts were offered in any particular lease sale to drive all higher cost coal from the regional market. In other words, if the intertract bid level is above zero then the expected rent on the marginal Federal tract is above zero

and more Federal coal should be offered and leased. A potential problem with intertract bidding is that it may tend to slow the downward movement of the f.o.b. price towards a competitive equilibrium by capturing the transitional quasi-rents as bonus payments.* Also, it may favor those firms capable of paying large bonus payments over equally capable firms who are not as well-capitalized.** Intertract bidding does not appear to be essential to the establishment of a sound Federal coal lease-pricing policy; however, its further development appears to be warranted and practical intertract bidding sale procedures are currently being developed by an interagency task force in order to test the system's merits.

* However, this is true of any device utilized to capture the quasi-rent.

** This holds for any competitive bonus bid system when large quasi-rents may exist.

Notes for a Proposal for a Flat-rate Minimum Acceptable Bid (The Gordian knot solution)

Charles L. Towle

The Department should as a matter of policy abandon evaluation of bids on a lease by lease basis prior to each tract sale. Rather, the Department should adopt a standard-level minimum acceptable bid of 12.5% and \$25 per acre for surface mines and 8% and \$25 per acre for underground mines as it has already done in the case of lease readjustments. As a variant of the proposal, the Department could consider applying flat rates determined regionally rather than nation-wide. These would be lower in regions such as southern Appalachia and higher in regions such as Powder River. Comparable sales or DCF analysis would still be used from time to time to estimate impact on fair market value and economic rent.

The Department is very susceptible to an argument that with its present policies it is not capturing the economic rent of the resource at all, but rather riding on the coat tails of the OPEC price rises in energy. In an equilibrium state resource rents would be very small in the coal industry. Further 80% + of western coal is sold through long-term contracts, most with cost escalators. There is some validity to the assertion that the Department is causing impacts on consumers, which it would not be if it were capturing true resource rents. We have always accepted as fact the argument that the long-run supply curve for coal is very elastic and in fact have used this argument in support of unsuitability criteria. If we are not collecting true resource related rent, we are in fact contributing to national inefficiency and inflation. If this is the case, the minimum value legally possible should be collected.

Advantages

1. The Federal government would reduce a major cost in the present administration of the program. GS evaluation drilling and discounted cash flow analyses would no longer be required except for special cases. ELM adjudication of sale costs would be greatly reduced.
2. The time to prepare for sale would be reduced by 2 to 3 months.
3. The risk of sale failure and its consequences for assuring an orderly supply of coal sufficient to meet coal targets and its costs would be greatly reduced. Costs associated with sale failures would be avoided.
4. A major source of dissension on the Federal coal management program within and without, the Department would be removed.
5. A number of difficult technical problems with discounted cash flow such as the "proper" level for the discount rate and how to apportion value to small interdependent tracts would be mooted.
6. Decision should be seen as a very positive move by the Administration to foster greater use of coal. Market penetration potential of western coal would be greatly enhanced.

V-60

7. Decision should be seen as a very positive move by the Administration to counter the rising cost of energy.
8. Lower entry costs could foster greater competition by encouraging smaller enterprises to enter Western coal production.
9. Selection of tracts with best resource (cheapest to mine) would be given greater rewards by allowing rent differentials among tracts rather than flattening them across all tracts in seeking rents for public. Tendency would be to lease the best coal first (the coal most beneficial to national economic efficiency and, possibly, least costly to the environment)
10. Reliance on very sensitive mine cost models and other computer models would no longer be necessary.

Disadvantages

1. Department would be challenged that it is no longer fulfilling requirement of the FCLAA that the Secretary receive fair market value for coal resource, but...
 - a) Fair market value is provided for through use of competitive bidding structure, which we would not abandon, and in which would take steps to enhance through use of intertract and encouragement of a secondary market in Federal leases.
 - b) We would continue to conduct comparable sales analyses on a broad regional basis. Analyses thus far show that even at the minimums proposed, the Department is exceeding FMV levels in most cases.
2. Department would be losing revenue it could collect for the public, but....
 - a) nearly half of any revenue we lose we would be regained through Federal taxes.
 - b) 50% of revenue now goes to states which compete to some extent with U.S. for rent and which:
 - 1) have generally indicated an indifference to FMV policy or in some cases opposed aggressive FMV collection (feeling that while FMV brings some immediate revenue, the enhanced industrial activity that would result from removing it would, because of multiplier effects, result in the end in greater tax collections where they are needed in the state.)

- ii) have shown an excellent ability to collect "excess profits" through their own taxing mechanisms, which have the added advantage of reflecting actual state policies toward rate of coal resource development.
 - iii) favor the more visible policy of direct energy impact aid.
3. Present resource owners would be losers if this decision were taken since the Federal government is the price leader for all Western coal.
 4. Eastern coal operators would lose some additional business to Western coal mines.
 5. Personnel dislocation, but — the Department needs 200 or more for coal program and also needs employees with management experience and abilities in mining and minerals, especially in coal. Evaluation would still be required for exchanges and PRIA tests.
 6. Abrupt change in policy can cause political problems regardless of the merits of the change.

The Intertract Approach

Donald J. Bieniewicz
December 1979

Preliminary Steps

- The upper limit on the number of tracts to be sold is announced.
- The minimum acceptable bid is announced to be some fixed payment per acre, say \$25 - \$100, the same for all leases offered. The royalty rate is 12 1/2%.
- USGS estimates the conditional expected economic rent (CEER) of each lease based on the best possible estimate of the f.o.b. price which will result from the sale.

Option 1

- A sealed bonus bid auction is held.
- The bids are opened and the high bidder on each tract is determined.
- Tracts are ordered via the following proportion:
$$(\text{high bid}) \div (\text{USGS estimate of CEER})$$
- Tracts are accepted in the above order until the sale target is reached.

Option 2

- The USGS estimates of CEER are announced presale for information purposes.
- All bidders interested in a tract must identify themselves to the government prior to the sale.
- A stepped-price increase auction is held.
- Prices are increased in steps together for all tracts as an equal proportion of the tracts' estimated CEER.

- Gradually bidders will drop out until the number of tracts having interested bidders equals the sale target.
- If a tract still has more than a single firm interested in it, a separate oral auction for the tract can be held or the price could be stepped up for such tracts alone until only a single competitor remains.

MINING AND

ECONOMIC

DATA ON COAL TRACTS PRIOR TO LEASE SALE

Prepared for Fair Market Value Task Force

Office of Coal Leasing

Planning and Coordination

Department of the Interior

by

John A. Pederson
U.S. Geological Survey
Conservation Division
November 1979

The issue of the desired level of public disclosure of resource, recovery, and economic data on coal tracts is readily subdivided into two groups.

1. Providing adequate coal resource and associated overburden, underburden, and interburden, hydrologic and related physical factors, both quantity and quality parameters plus basic elements of mining methods and production of coal. This would be the basis of the the firm's plan for development and production of coal including cost and revenues and to formulate a bid on the tracts of interest.
2. Provide resource, mining method, cost, and revenue factors, and the coal resource value of the tract itself.

In view of these alternatives, a review of the statutes of P.L. 94-377 show the following provisions.

"Sec. 2 x x x Prior to his determination of the fair market value of the coal subject to the lease, the Secretary shall give opportunity for and consideration to public comments on the fair market value. Nothing in this section shall be construed to require the Secretary to make public his judgment as to the fair market value of the coal to be leased, or the comments he receives thereon prior to the issuance of the lease x x x .

Sec. 3. x x x (C) x x x Prior to issuance of a lease, the Secretary shall evaluate and compare the effects of recovering coal by deep mining, by surface mining, and by any other method to determine which method or methods or sequence of methods achieves the maximum economic recovery of the coal within the proposed leasing tract. This evaluation and comparison by the Secretary shall be in writing but shall not prohibit the issuance of a lease; however, no mining operating plan shall be approved which is not found to achieve the maximum economic recovery of the coal within the tract. Public hearings in the area shall be held by the Secretary prior to the lease sale x x x .

Sec. 8A.(a) The Secretary is authorized and directed to conduct a comprehensive exploratory program designed to obtain sufficient data and information to evaluate the extent, location, and potential for developing the known recoverable coal resources within the coal lands subject to this Act. This program shall be designed to obtain the resource information necessary for determining whether commercial quantities of coal are present and the geographical extent of the coal fields and for estimating the amount of such coal which is recoverable by deep mining operations and the amount of such coal which is recoverable by surface mining operations in order to provide a basis for —

'(1) developing a comprehensive land use plan pursuant to section 2;

'(2) improving the information regarding the value of public resources and revenues which should be expected from leasing;

'(3) increasing competition among producers of coal, or products derived from the conversion of coal, by providing data and information to all potential bidders equally and equitably;

'(4) providing the public with information on the nature of the coal deposits and the associated stratum and the value of the public resources being offered for sale; and

'(5) providing the basis for the assessment of the amount of coal deposits in these lands subject to this Act under subparagraph (B) of section 2(a)(3) x x x .

(d) The Secretary shall make available to the public by appropriate means all data, information, maps, interpretations, and surveys which are obtained directly by the Department of the Interior or under a service contract x x x . The Secretary shall maintain a confidentiality of all proprietary data or information purchased from commercial sources while not under contract with the United States Government until after the areas involved have been leased x x x .

(f) The Secretary is directed to prepare, publish, and keep current a series of detailed geological, and geophysical maps of, and reports concerning, all coal lands to be offered for

leasing under this Act, based on data and information compiled pursuant to this section. Such maps and reports shall be prepared and revised at reasonable intervals beginning eighteen months after the date of enactment of this Act. Such maps and reports shall be prepared and revised at reasonable intervals beginning eighteen months, after the date of enactment of this Act. Such maps and reports shall be made available on a continuing basis to any person on request x x x .

- (h) x x x x to supply a statement of the results of test boring of core sampling including logs of the drill holes; the thickness of the coal seams found; an analysis of the chemical properties of such coal; and an analysis of the strata layers lying above all the seams of coal."

Thus the statutes specifically state that resource data and mining methods analysis are to be released to the public. There is reference to providing data as to the "value of the public resources being offered for sale."

The regulations as specified is 43 CFR 3400's - Coal Management contains the following paragraphs:

34221-1

"(a) Solicit public comment on the fair market value of the tract or tracts proposed to be offered. Such solicitation shall ask for comments on these items which affect the appraisal such as the terms and conditions of similar market transactions, the quality and extent of the coal resource, the price that the mined coal would bring in the market place, the cost of producing the coal, the interest rate at which anticipated income streams should be discounted, depreciation and other accounting factors, the value of the surface estate (if private surface), the mining method of methods which would achieve maximum economic recovery of the coal and any other items which might affect the appraisal of the tract or tracts. Such comments will be solicited for a period of not less than 30 days x x x .

3422.2 Notice of Sale x x x x

(2) Contain the pre-lease indication of maximum economic recovery by bed of coal to be mined as a guide to bidders, even though this determination would not be a lease term and would be subject to revision in the formal MER determinations to be made in mine plan approval x x x .

Therefore the regulations are not as specific as the statutes.

The issue of what coal tract data that exists and could be released/made available on tracts offered for lease sale is readily subdivided into 3 topics: resource (coal and other), mining, and economic; in addition, these can be input data or processed results. One end of the spectrum is to provide or allow interested parties the opportunity to obtain as much data on the coal resource including quantity and quality along the parameters of the associated over-inter and underburden, hydrologic and other data on physical features. The other end of the spectrum is to provide comprehensive reserve, mine design, cost, revenue, and a value assessment of the tract including the Government's estimate of minimum acceptable bid. Between these two polar approaches there are a number of intermediate solutions. For analysis purposes, comments are structured at these two levels.

The first approach is designed to provide the serious potential bidder with the data on coal resource and associated environment. Thus the firm could design an optimum mine, select equipment and necessary facilities, specify the costs and revenue elements applicable to the firm, and thereby develop a basis for bidding on the tracts in which it has an interest. This approach seems most applicable to leases, that would require the development of new mines and associated facilities, thereby, having a high competitive interest.

The second approach provides input data for all project phases and processed data on coal resource, mine design and costing through to and

including tract value. The cost and revenue parameters must be obtained from other sources and as such the costs that would be incurred by a company is subject to the specific details of product design, negotiating ability, and financial credibility of the potential buyer. In addition, in times of double digit inflation the changes in base level of the monetary factors changes significantly in a short time so the useful life of the cost data is limited. Accordingly, as one proceeds from the first approach to the second, the values provided are based to a greater extent on value judgements or factors that can change in a short period of time.

In this approach a potential bidder can enter the scene at any level of data development. However, if the bidder does not start with an assessment of the raw resource data, he will not have a complete understanding of the strength, and applicability of the available information. If these data are used by a firm, the Government may be held liable for effects or operations that are incurred because of reliance on the Government provided data. In addition, the Department would be into the business of providing economic evaluations of tracts and potential bidders may spend a considerable part of their effort factoring or second guessing the Government derived tract values instead of developing independent assessments of how to conduct their future operations. Because of the normal desire to minimize "money left on the table" by potential bidders this is incentive to minimize the size of bids if the threshold value (minimum acceptable bid) is known. Therefore, this approach may tend to encourage collusion.

This approach seems more applicable to small tracts where the offset operator and/or applicant has extensive knowledge of the coal resource, its feasibility of mining and probably has existing operations. Therefore he knows the basic factors and is probably most interested in obtaining the best personal bargaining position. Greater knowledge of the Government assessment of the value of the coal resource would tend to enhance the interested firm's ability to acquire the tract at lesser cost.

Accordingly, it seems appropriate to provide quality basic resource data so that the interested parties can prepare their best estimates of the coal resource value and thereby the bonus bid. The objective and acquisition and dissemination of data on resources and mine design are consistent with the expertise of the U.S. Geological Survey. By providing a reliable resource data and generalized mine plans the Government will tend to reduce uncertainty and thereby may enhance the profitability of the project and accordingly the Government revenue.

If it is deemed desirable to use the total data release approach the system employed by the U.S. Forest Service would provide some insight. In the proposed sale of timber cutting rights the U.S. Forest Service provides an estimate of recoverable timber, a detailed list of applicable costs, and the minimum acceptable bid. These data are made available publicly and provide a basis for the potential purchasers to develop their bids. However, as a condition of acquiring a lease the stipulations provide that the lessees submit to the Forest Service a comprehensive operating cost statement for each tract acquired.

Accordingly, the costs used in a lease sale are derived from the operators in the area of interest. This insures costs applicable to the area but the operators must release data of the type that coal operators in the past have been reluctant to make available to the Department.

In summary, two approaches are provided for release of coal release data:

- (1) Maximum coal and associated resource data with a generalized mining method description.
- (2) Total resource, mining method, and economic analysis.

The first approach is well adapted to tracts requiring new mines which have significant competitive interest. The second approach seems more applicable to small tracts with interest only to the offset operator who may desire to enhance his bargaining position and acquire the tract of interest at the lowest price.

PROCEDURES
FOR
EVALUATING SMALL TRACTS

Prepared for
FAIR MARKET VALUE TASK FORCE
Office of Coal Leasing
Planning and Coordination
by

JOHN A. PEDERSON
U.S. Geological Survey
Conservation Division
October 1979

PROCEDURES FOR EVALUATING SMALL TRACTS

SMALL TRACT ISSUE DEFINITION

Ownership Patterns and Lease Status

Economic Evaluation

HISTORICAL AND LEGAL PERSPECTIVE

Fair Market Value

Surface Ownership

Mineral Ownership

Oil and Gas Lease Pooling

Solid Mineral Lease Aggregation

Coal Leasing

Transaction and Uncertainty Costs of Small Tract Values

ALTERNATIVES

Basis of Aggregating Lands

Capital and Operating Cost Vintage

Coal Price Vintage

Disaggregation of Model Coal Resource Economic Value to Tract of
Interest

Transaction and Uncertainty Costs for Small Tracts

REFERENCES AND GENERAL SOURCES

PROCEDURES FOR EVALUATING SMALL TRACTS

The issue of evaluating small tracts of coal lands to determine coal resource economic value input to fair market value is grouped into three headings:

- o Small tract issue definition.
- o Historical and legal perspective.
- o Alternatives.

These headings are discussed sequentially.

SMALL TRACT ISSUE DEFINITION

The issues of determining the value of a small tract, as compared to that of a tract large enough so that when developed it would allow economies of scale, are as follows:

- o The variation in unit values of the resources of small tracts vs. similar variations for larger tracts are inversely proportional to the relative sizes of the tracts.
- o Administrative costs of acquisition to the applicant or the firm tend to be independent of the size of the tract, thereby reducing the unit resource value of the smaller tracts.
- o The aspects of coal occurrence and quality, together with mining and extraction technology, are the same as for large competitive tracts. Sometimes the difficulties of evaluating small tracts have been caused in part by the lack of timely leasing and therefore opportunity for orderly development. Therefore, it seems appropriate to look at these issues from the perspective of: (1) ownership patterns and lease status and (2) economic evaluation.

Ownership Patterns and Lease Status

The economic value of Federal coal tracts is affected by the surface ownership status, the area and shape of the contiguous Federal coal ownership, and the non-federal mineral ownership status of the adjacent lands.

Following the Secretary's statement of policy concerning leasing where the surface over Federal coal land is not federally owned, the value of areas with all Federal ownership has increased. Such areas of all Federal ownership which are contiguous and contain a 40-year supply of coal reserves would have a high value. The lesser value would be associated with small acreages of Federal surface and coal containing small reserves and surrounded by non-Federally owned coal or Federal coal with non-Federal surface. The latter areas would have little market value until interest in development of the surrounding non-Federal coal was shown.

Economic Evaluation

Tracts are evaluated using either the comparable sales or the discounted cash flow method (DCF). Rigorous assessment of the evaluation methods indicates that tract size may be a consideration in assessing coal unit values as discussed by Geehan.⁶

"The general approach in a DCF procedure is to first estimate the capital investment costs, operating costs, depreciation, depletion allowances, and income taxes that would be incurred in the development of the property in question. These items then are the bases for a series of projected annual cash flows, where cash flow is defined as gross revenue minus out-of-pocket expenditures minus taxes. Each year's cash flow is then discounted back to the present time at a rate that approximates the industry's cost of capital. (This discounting reflects the time value of money, i.e., the fact that a dollar received one year from now is worth less than a dollar received now.) The summation of these discounted cash flows is called net present value, and is equivalent to a FMV estimate.

Any DCF analysis is relatively sensitive to the estimates of cost of capital equipment and the cost of operating that equipment. These items are functions of the scale of operations (annual production) which is assigned to the mineral deposit. It is generally true that economies of scale, i.e. lower average total cost per unit of output, can be achieved by increasing the scale of operation. On the other hand, there must be adequate mineral reserves to support these larger scales of operation. The principle of economies of scale has a special significance because tracts can be viewed as either part of a large mining unit with relatively low average total costs or as a unit in itself with higher costs. Given the sensitivity of the income approach to costs, some guidance is necessary regarding the selection of scale."

For the firms, there must be consideration of the availability of capital, alternative investment opportunities, the present value of future earnings, rates of return, and need for coal in downstream facilities, and so on. For the Government, the appraisal of what is an optimum value hinges on the various public revenues that may be derived, returns from publicly owned lands, regional and national social and economic impacts, national economic security, and environmental protection. Accordingly, it may be difficult for both the company (the buyer) and Government (the seller) to arrive at a single approach which not only balances all of these considerations, but also copes with the uncertainties of future prices and costs, the quantity of ultimate reserves, and the balancing capital investment against rate of recovery.

The actions of sellers and of purchasers can be modeled using various approaches. While classical economic models provide some insight into potential results, the situation of small tracts of one seller and one potential purchaser can be visualized using the bilateral monopoly model as depicted by Bilas² and by Braff³. This model depicts separate optimum decision points for seller and buyer and there is not a rigorous solution. An intermediate point between the individual choices may represent the basis for a negotiated optimum solution.

HISTORICAL AND LEGAL PERSPECTIVE

The history of economic evaluations of mineral resources is based in part on laws that have been formulated for mineral properties. Accordingly, since we are concerned with coal, it seems appropriate to review these laws in view of: (1) fair market value, (2) surface ownership, (3) mineral ownership, (4) oil and gas lease pooling, (5) solid mineral lease aggregation, (6) coal leasing, and (7) transaction and uncertainty costs of small tract values.

These observations are later brought to bear on coal tracts regarding aggregation and disaggregation of tracts for small tract value purposes.

Fair Market Value

Geehan⁶ comments on this subject as follows:

"According to the Federal Coal Leasing Amendments Act of 1976 (P.L. 94-377, 90 stat. 1083) the Secretary of the Interior is authorized to offer coal for leasing by competitive bidding, where no bid will be accepted which is less than fair market value (FMV).

Fair market value has been defined as

'the amount in cash, or on terms reasonably equivalent to cash, for which in all probability the property would be sold by a knowledgeable owner willing but not obligated to sell to a knowledgeable purchaser who desired but is not obligated to buy.'

(Uniform Appraisal Standards for Federal Land Acquisitions, p. 3, 1973)"

There are four general methods for estimating FMV:

- o Prior sales of the identical property.
- o Replacement cost.
- o Comparable sales.
- o Income approach.

Prior sales of the identical property normally do not exist, and the replacement cost approach is not realistically applicable to the mineral estate. Some comparable sales data may not be readily convertible to FMV. Therefore, the income approach to FMV, utilizing discounted cash flow (DCF) procedures is the method most used.

Geehan⁶ further states

"The concept of FMV has its roots in condemnation actions taken by the Federal government under the authority of the Fifth Amendment of the Constitution. In a case often cited in appraisal practice, Justice Roberts, in delivering the majority opinion in U.S. v. Miller (317 US 369), stated:

"Again strict adherence to the criterion of market value may involve inclusion of elements which, though they affect such value, must in fairness be eliminated in a condemnation case, as where the formula is attempted to be applied as between an owner who may not want to part with his land because of its special adaptability to his own use, and a taker who needs the land because of its peculiar fitness for the taker's purposes. These elements must be disregarded by the fact finding body in arriving at fair market value.

Since the owner is to receive no more than indemnity for his loss, his award cannot be enhanced by any gain to the taker. Thus, although the market value of the property is to be fixed with due consideration of its available uses, its special value to the condemner as distinguished from others who may or may not possess the power to condemn, must be excluded as an element of market value.

(317 US 375) (footnotes omitted)

Recognizing that FMV is not influenced by the position of the estimator, i.e., whether he represents the buyer (condemner) or seller (condemned), the Court's decision is instructive to the question of selection of scale. An estimate of FMV should not consider unique values of the property to an adjoining property owner."

As defined in The Uniform Appraisal Standards for Federal Land Acquisition:⁷

"Highest and best use: The determination of the fair market value should include consideration of the highest and best use for which the property is clearly adapted. By highest and best use is meant either some existing use on the date of taking, or one which the evidence shows was so reasonably likely in the near future that the availability of the property for that use would have affected its market price on the date of taking and would have been taken into account by a purchaser under fair market conditions. . . . In no event should the appraisal be made by the evaluation of the property for one use, and the addition to that amount of the value for a different and inconsistent use. And as spelled out in more detail under the heading

'Conjectural and speculative evidence'. . . remote or speculative uses should not be considered. Normally, because of existing economic pressures, the existing use represents the highest and best use.

Because the highest and best use is a most important consideration, it must be dealt with specifically in appraisal reports. Many things must be considered in determining the highest and best use of the property including: supply and demand; competitive properties; use conformity; size of the land and possible economic type and size of structures or improvements which may be placed thereon; zoning; building restrictions; neighborhood or vicinity trends."

Surface Ownership

Real property (surface) transactions consider the value of tracts as they are owned; i.e., they must stand alone. The value that can be achieved as a result of combining more than one tract is not a consideration. The result is, of course, that the sum of the parts may not equal the value of the combined group as these values are achieved on a different basis.

Surface ownership during ownership of one party is not inferred to change in value, rather change in value is normally reflected when the property is disposed of. Accordingly, the issue of aggregation of parcels of which several may be used collectively is of limited concern. However, when the lands are subsequently disposed of, the net gains realized are attributable to the lands in proportion to the acreage and cost of the original transactions.

Mineral Ownership

Mineral leases, which are a form of real property, have several unique aspects such as:

- o Their maximum duration is normally related to the stage of depletion of the mineral deposit being leased or to a fixed time limit.
- o They continue subject to the above by the lessee meeting certain financial or development obligations.
- o The revenue derived from sale of the leased mineral is divided between between the lessor (original owner) and the lessee (or developer). Accordingly, this is a special form of a "partnership" in that one party, the lessor, provides the mineral resource and the other party, the lessee, the capital and management to develop, produce, and market the leased mineral commodity.

The income tax laws and financial accounting practices recognize the real property aspect of mineral deposits. In addition, since the quantity of the deposit is reduced in quantity as it is recovered (depleted) the tax and financial procedures recognize that the value of the property is lessened. Accordingly, the costs of exploring for, developing, and producing mineral deposits are allocated to the quantity of resource in the deposit of interest and as the deposit is produced and marketed these costs are similarly apportioned. Accordingly, the basic unit for operational accounting practice is the deposit which is analogous to an industrial plant composed of several units.

Aggregation of mining properties is discussed by Morgan⁹.

"The joining together of miners owning separate claims covering the same lode for purpose of a single mining operation is not new, but occurred in the early days of mining. Lindley, in his work, stated:

Long before patents were allowed, indeed from the earliest period in which mining for gold and silver was pursued as a business, miners were in the habit of consolidating mining claims, whether they consisted of one or more original locations, into one, for convenience and economy in working them. *

Such consolidation generally occurred for purpose of working a single lode or vein. Even today where the formation to be mined underlies a general area, as often occurs in uranium bearing formations; or, in those cases where one shaft and a single mining operation may adequately serve additional claims or properties and the owners may thereby reduce their respective economic outlay; it appears feasible and practical to consolidate operations. By the same reasoning, joining together properties for operations which may involve several non-contiguous and non-associated properties and may be greater in scope than what might be designated as a single mining operation; (i.e. operation of one mine or one vein,) appears have some feasibility and may in some situations be desirable. This is particularly true where several operators desire to join their mining properties and dedicate the ores to a mill in which all shall share in the benefits of lower milling costs obtainable by a large single milling operation. Also, there is a possibility of tax benefits by way of depletion.

Joint operation is certainly worthy of consideration in a situation where discovery of ore-bearing formations has been made in remote areas and, where the ore bodies in the same area are made on separately owned claims, whether contiguous or not contiguous. Joint operation is particularly appealing in such cases where the respective ore bodies vary in total estimated reserves and in grade and character. The owners of the ore bodies of lesser value may not be justified in mining them if the ore cannot be upgraded or blended with higher grade production. Mining costs play an important part in an operator's determination of the feasibility of mining. Thus, in some cases an operator is faced with consolidating his property with others which would reasonably ensure an economic profit, or of selling the properties outright for a lesser gain than he wishes, or of deferring mining to some future date."

* 2 Lindley, Mines, 630 (1914 3rd ed).

Oil and Gas Lease Pooling

The irregular distribution of oil and gas reservoirs, their great variation in areal extent, quantity, and feasibility of extraction, and the inherent mobility of these fluids to migrate across property lines have produced a mass of ownership laws, tax regulations and accounting practices to encourage development, optimize production, reduce waste, and achieve equity among those parties with an economic interest in a reservoir (deposit). State laws and Federal regulations recognize the need to aggregate properties in a reservoir or portion thereof to optimize recovery and reduce waste.

In the development stage, tracts which by themselves are not economical to develop are pooled into an accepted pattern of development, either voluntarily or, normally, by the State oil and gas regulatory agency. Subsequently, the whole or a portion of a field may be operated as an entity (unit), although there may be more than one mineral owner (lessor) and/or lessee.

In each case Federal Income tax laws require that each separate property unit be treated as such. Because of this, and for equity reasons, it is necessary to allocate revenues and costs to the various tracts that comprise the pooled unit or recovery unit in proportion to their contribution to the unit. The basis of unitization for second recovery (therefore basis of allocating costs and revenues) is discussed by Landis,⁸ who outlined 12 types of maps and factors to be considered. The practice in Louisiana is described along with a manner of allocating participation costs is presented by the Regulatory Practices Committee¹².

"The State of Louisiana through its Department of Conservation employs a system which enables the owner of a drilling unit on the edge of a pool to obtain his fair and equitable share of the oil and gas in the pool without unnecessary cost or the drilling of unnecessary wells. Upon application, notice and hearing, the Department determines the amount of productive acreage in the edge spacing unit, then adds this acreage to the adjoining spacing unit which is presumably already producing. The owners of the edge tract are permitted to share in the cost of the well on the adjoining tract in the proportion of the number of productive acres in the edge tract to the number of acres in the consolidated tract; the producing unit is enlarged by adding such adjoining productive acreage with an appropriate allowable adjustment.

Determining Cost to Participate

The owner of the working interest in the newly added acreage is required to pay his share of the cost of the well on the enlarged production unit. If that well has been producing for some time, it is the practice to allow the new owner to pay on the basis of the depreciated total cost of the well, and the depreciation is based on the remaining percent of expected ultimate recovery of such well. Because the tangible equipment in a well, casing, tubing, surface equipment, pumping unit, tanks, etc., do depreciate at a different rate, another method of admitting a new owner would be for him to pay for the intangible costs, drilling, trucking, labor, etc., on the basis of depreciated expected ultimate recovery, and for the tangible costs on the basis of market value at the time of adjustment."

Unitization and allocation are discussed by Williams¹⁶.

"Because of the lack of experience in mining with unitization and because of the similarity in this area of mining to oil and gas production, an examination of approaches which have been taken in the oil industry might prove useful.

1. Allocation of Production

The most difficult problem to solve in the formation of an oil and gas unit where a large number of mineral owners are involved is the formula to be used in allocating the production of minerals from the unitized area. It is here that the decision to unitize is often rejected. The ideal which the drafter of such a formula should attempt to achieve is that each participant in the unit be given that amount of unit production which is in exact proportion to the contribution which he makes to the unit. However, with human nature being what it is, each participant tends to overstate his contribution and the formula will probably result from the give and take of compromise.

a. Surface Acre Formula

A common method for allocating production in the oil industry has been to allocate that amount of production to each participant which bears the same ratio to total production from the unit area as the number of surface acres contributed by the participant bears to the total surface acres contained in the unit area. This method is particularly appropriate when the allocation is being made prior to the exploration of the lands within the subject unit area, and, therefore, prior to any specific knowledge as to ore deposits in the subject lands.

b. Recoverable Reserves Formula

When the property has been sufficiently explored or developed to allow for the estimate of recoverable reserves, the formula is usually drawn in the oil industry using this as its basis. In this instance, the participant receives that amount of production which bears the same ratio to total production as the estimated total recoverable reserves (or in some cases, the total estimated acre feet of producing sand) contributed by the participant to the unit bears to the total contained in the unit. In mining operations, this approach would be practical after close space drilling had been completed.

In some large units, the determination of this ratio is often left to be accomplished after exploration has occurred. In addition, it sometimes varies within designated participating areas within a unit."

Solid Mineral Lease Aggregation

The 1872 Mining Act provided for issuance of title to limited size parcels for the mineral and surface rights on mineral deposits on proof of an adequate exploration program

and discovery of a mineral or minerals. Accordingly, the total mineral interest was conveyed to the applicant. Therefore, the Federal government's monetary interest in these parcels is limited to the income tax revenue. For tax and for financial reporting purposes, the parcels with a single owner containing a part or all of a deposit are included in a property unit. For example, there is no allocation to those parcels that comprise the unit except possibly for some mineral interests that may have a limited royalty (overriding a royalty) interest. Accordingly, original mineral ownership is of limited importance. With the passage of the 1920 Mineral Leasing Act whereby coal and bedded minerals were leased, the aspect of the Federal lessor entered into the picture. However, the principle of aggregation of parcels to form an extraction unit for operational, tax, and financial reporting purposes is recognized, provided the royalty and/or overriding royalty considerations are accomplished. In addition, these mineral properties may be jointly owned or subleased from an earlier owner so that the aspect of the lessor/lessee relationship exists. Accordingly, there is a wide variety of mineral properties that are aggregated largely on a deposit basis to form an operational unit. The revenues and costs may be held aggregated or, depending on the form of the economic interest, lessee, (royalty, overriding royalty) or other interest have revenues and costs allocated to their interests.

A summary of pooling or unitization prepared by Mr. Morgan⁹ modified to fit coal is presented. Words in parentheses indicate substituted words.

" . . . a brief presentation of some of the more important provisions contained in oil and gas joint and unit operating agreements, and a consideration of consolidation and unitization of mining properties utilizing such bases of operation. Such operation for (coal) mining properties appears to be practical and feasible as means of conservation of equipment, facilities and management. In some cases, consolidation with other properties would permit the mining of [an ore body] (a coal bed) which would not be commercial if mined separately. Unitization of all interests in mining properties presents a means whereby a greater return would be realized by the parties through savings in operation and management costs and in the sharing in all production from the unit.

Some of the more important provisions suggested to be included in an operating agreement for a consolidated or unitized mining property are:

1. The method of determining participation in production based on the number of acres contributed, the number of claims, the quality and quantity of [ores] (coal), value, mineability, and the pertinent factors relating to establishing a fair, equitable and reasonable percentage in which each party will share. However, where a consolidation is effected prior to discovery of [ores and minerals] (coal), consideration should be given to participation with respect to the acreage contributed and perhaps the cost of exploratory work to be performed on each property. The formula should be stated in clear terms so as to leave little chance for different interpretation by the parties.
2. The method of determining the percentage of costs and expense each party will bear and pay.
3. The rate at which operator is to perform mining on the respective properties contributed should be established, if applicable. This may in some cases be an important factor where a leased property contributed is required to be mined at a specified rate under the lease.
4. Operator may wish to have a call on the [ores] (coal) produced, particularly where operator is the owner of [an ore processing mill] (a power plant), for the purpose of insuring adequate [mill feed] (fuel supplies)."

Williams¹⁶ discusses compulsory mining unitization in New Mexico

Compulsory unitization in the mining industry is found only in New Mexico where in 1967 the legislature there passed an act entitled "Consolidation of Small Tracts for Mineral Development."¹⁷

¹⁷N.M. Stat. Ann. 63-32-1 et seq. (1960)

This law came about through an interesting set of circumstances involving a uranium-rich section of New Mexico land. An enterprising lady real estate developer in 1933 subdivided the section into 640 one-acre tracts. During the course of her sales campaign, the section was further subdivided into smaller tracts, some being as small as 1/16th of an acre. The subdivision ultimately resulted in 2083 separate and distinct tracts being created within the section. . . .

. . . this operator was able to obtain mining rights covering in excess of 85% of the entire mineral estate in the Section.

It was at this point after several years of effort to obtain the mineral interest in the Section that the concept of compulsory unitization of the Section was developed. In 1968, under the new consolidation law, the Section was consolidated by order of the state district court and as to each tract on which the operator did not otherwise own the mining rights, a mining lease was effectuated to the operator. The terms of the lease are set out in detail in the decree.^b

The statute under which this consolidation order was obtained is patterned somewhat after the compulsory unitization statutes pertaining to oil and gas

Its first section is a declaration of policy:

It is hereby declared to be in the public interest to provide a method whereby small tracts of land, which cannot economically be separately explored and mined, may be consolidated for the purposes of exploring, mining and conserving the natural resources of this state under those circumstances where the mineral development of such tracts and the recovery and conservation of the natural resources of this state therein contained cannot otherwise be practically accomplished."

^b

There is no published report of this case. The order was issued by the District Court for McKinley County, New Mexico on April 15, 1968 under Docket No. 12801.

Coal Leasing

The current Federal coal leasing program is entering a scenario that has seen a moratorium on leasing followed by court imposed sanction that allowed leasing only to keep mines operational. In addition, the coal industry has been rapidly expanding following an extended period of low activity.

Looking to the future, the thrust of the coal program is to lease large tracts so as to encourage good mining practices, reclamation and community planning, to achieve optimum coal recovery, and obtain fair market value of the coal resource. Accordingly, in tract delineation, selection and ranking the logical mining unit (LNU) concept is used.

These procedures are consistent with the intent of the Federal Coal Leasing Amendment Act of 1976 which requires:

- o Assessment of mining method or methods.
- o Achieving maximum economic recovery (MER).
- o Obtaining fair market value. (FMV)

The former leasing process was based on the applicant's request for particular lands. These applications commonly specified quantity, quality, location, the time coal resources were to be made available, in the manner that would best serve the applicant's need. By such action, these tracts, became "isolated tracts". This approach was not necessarily based on the overall consideration of the Federal coal lands in the area of interest. There are, in some cases, small tracts of Federal coal which are located a significant distance from other lands.

Timely recommendations for leasing, steps to acquire the necessary data, and make evaluation of the coal resource help insure that unleased Federal coal is not bypassed. Distress sales of bypassed coal are a function of untimely marketing, not intrinsic coal resource economic value.

The Geological Survey evaluation model depicts orderly mining operations and rate of extraction as discussed by Pederson.¹¹ The model simulates action to take place on specific lands at a particular time. All lands in the area of operation must be considered. This concept of pooling lands, operations, and mineral interest, has long been embodied in oil and gas extraction. Accordingly, it seems appropriate for Federal coal, and is conceptually embodied in (LMU).⁹

A problem which has arisen in past government estimates of minimum acceptable bids for small tracts is whether the estimate should be based on the tract's value in the general market place or on its value to the bidder in the superior position. The former criterion is equivalent to capture of the FMV, while the latter is equivalent to capture of economic rent.

These criteria can have extreme ranges.⁴ For example, the income (DCF) approach to value applied to a small Federal tract recently offered for lease in Montana indicated no value when applied to the tract alone, but a value of almost \$4,000 per acre when the small tract was evaluated as part of a mining unit including adjoining coal (both cases assume the minimum royalty of 12.5 percent).

The established principles of FMV require that estimates be based on the value of the subject property in exchange in the open market. By evaluating small tracts as part of a logical mining unit encompassing adjoining coal, it can be argued that the government has been estimating the tract's value in use to the anticipated superior bidder.

A review of these issues and the basis of evaluation indicates there are ways of assessing them.

Accordingly, the LMU concept in form of a viable economic mining unit (VEMU) is recommended as the appropriate vehicle for determination of coal resource economic value. The approach of grouped tracts which best represents how the tracts will be mined would appear to be the best use of the lands, and it is consistent with the fair market value criterion.

Efforts to enhance the formation of VEMU may include stipulations on future leases to require pooling of lands into a logical mining unit even if there are more than one lessee. However, the issue of coal market availability to the potential lessee(s) warrants further review. Pooling lands would allow the management agency latitude to respond to timely requests for leasing under small tract procedures and an opportunity to lease tracts at their discretion regarding size and timing. This evaluation procedure could also ascertain the economic value of lands that may be acquired in exchanges and in the lease modification procedure.

The leasing regulations require that tracts be designated for small business lease sales and for mining licenses. During the tract delineation phase, tracts amenable to the requests of small business would tend to be smaller than the standard competitive lease sales tracts and some smaller tracts could be evaluated on stand-alone basis.

In addition the depicting of small tracts as being noneconomic introduces several issues or consequences as follows:

- o Highest and best value needs to be demonstrated
- o Economic recovery of coal needs to be substantiated.
- o Many selected lands for exchanges would have no value.
- o Lands designated as unclaimed-undeveloped in Preference Right Lease Applications would seldom have value.
- o Lease modification value would be minimal.

If tracts are handled on a stand-alone basis (especially, if the coal resources are inadequate to support an economic mining operation), it would appear that this is not the highest and best use either for the fair market value or the Department's land use planning screen.

If each tract of a group is considered independently and the reserves are determined, the factors of the lease offset, slope considerations and other aspects will materially reduce the calculated recoverable quantity of each below that which would be obtained if these tracts were assessed as a group.

Small parcels offered for land exchanges would be assigned nominal values, as would the mining land claims designated within PRLA's, because of their limited size would probably not support a separate mining operation and thus be deemed nominal. Similarly, lease modifications would normally have no bonus value and, if deemed economic, would have only basic royalty.

Transaction and Uncertainty Costs of Small Tract Values

Attempts to combine several parcels or tracts into a unit for development and production of coal must consider two elements. The administrative costs of acquiring a tract of land offered for lease will tend to be related more to the number of tracts than to the costs per acre or ton of coal.

Statistical tests of subdivision of a population into smaller and smaller groups show that as the groups get smaller, and more numerous, the range of unit values (\$/ton) tends to increase. Therefore, to reduce risk and by being assured of an economically feasible tract the buyer tends to bid less than the VEMU average. Thus, the unit value of small tracts tends to be lesser because of transaction cost and small tract value uncertainties..

ALTERNATIVES

Alternatives in the form of a "position decision option document" are presented on the five factors of interest: (1) basis of aggregating lands; (2) capital and operating cost vintage; (3) coal price vintage; (4) disaggregation of model coal resource economic value to tract of interest, and; (5) transaction and uncertainty costs for small tracts.

Issue

The extent of lands and quantity of coal resources to be included when modeling coal resource economic value determinations needs to be structured. Any DCF analysis is relatively sensitive to the estimates of cost of capital equipment and the cost of operating that equipment. These estimates are functions of the scale of operations (annual production) which is assigned to the mineral deposit. It is generally true that economies of scale (i.e., lower average total cost per unit of output) can be achieved by increasing the scale of operation. On the other hand, there must be adequate mineral reserves to support these larger scales of operation. The principle of economies of scale has a special significance because a tract can be viewed as either part of a large mining unit with relatively low average total costs or as a unit in itself with higher costs. Given the sensitivity of the income approach to costs, some guidance is necessary regarding the selection of scale (i.e., is the tract of interest to stand alone and bear all capital and operating costs for a mine on that tract or is the tract to be considered a part of a VEMU?).

Alternatives

A. Tract of interest only.

Pro

- * Relates only to coal resource being evaluated.
- * Legally defensible.
- * Presents evaluation based on independent assessment of coal resource.

Con

- * Does not necessarily relate to how coal would be produced in actual mining conditions.
- * Simplifies method of tract evaluation but MER may be difficult to define.

B. Tract of interest plus land under control of applicant or industry nomination.

Pro

- * Model of a real world situation as to mining method and recovery.
- * Evaluation model and MER compatible.
- * Tends to show a higher CREV.
- * Regulations provide the approach in LNU's.

Con

- * If applicant has no lands or limited amount of lands, value may be negative because of high capital costs.
- * Does not typify a competitive situation.

C. Tract of interest plus sufficient unleased land to form a VENU.

Pro

- * Allows for an adequate quantity of coal resource to allocate capital and operating costs.
- * Maximizes CREV.

Con

- * Basis of choice of coal resource may not be defensible.
- * Does not necessarily reflect real world situation.

Capital and Operating Cost Vintage - Adapted from Tract Evaluation
 Task Force 155, Issue Paper 19

Issue

When determining the CREV, especially when using the VEMU and coal lands are being evaluated for potential addition to existing operations, the value of facilities and equipment must be defined. When the LMU has been designed, the current practice is to base investment costs in the DCF on prices of new equipment and to base revenues on current market conditions. An alternative which would more closely approximate the superior bidder's situation would be to base investment costs on the replacement costs of the remaining depreciable life of equipment in use and to base revenues on the coal prices actually being received by the superior bidder. Evaluating equipment at replacement costs would overcome the problems of under-counting depreciation. Assuming that depreciation represents recapture of original investment for future reinvestment, under conditions of inflation, depreciation based on original equipment costs does not allow for recapture of replacement costs.

Alternatives

A. Assume capital costs for equipment designed for the existing operations and only the marginal costs or the operating costs applicable to tract of interest.

Pro

- * Real-life situation.
- * High CREV value.

Con

- * Benefits and costs not matched.
- * CREV may be so high as to preclude any leasing.

B. Assume equipment designed for the existing operation and include ownership costs of capital equipment items valued on a used or depreciated basis.

Pro

- * Very real-life situation.
- * High CREV value.

Con

- * Difficult to assess value of used facilities.
- * Penalizes operator who made good decisions in acquiring equipment.
- * Not representative of a competitive model.

C. New equipment and facilities for tract of interest only.

Pro

- * Representative of idealized competitive situation values.
- * Value compatible with the issuance of lease referenced when evaluation made.
- * Very ideal for competitive tract.

Con

- * Very unreal situation as to equipment choice.
- * Capital costs are prohibitive if applied to an emergency tract.

D. Equipment and facilities of the type used in the area priced at the current value and using current operating costs.

Pro

- * Reasonable representative of a competitive situation.
- * MER evaluation model and real life represented by a common approach.
- * Allows for independent cost determinations.

Con

- * Not totally representative of an ongoing operation.
- * There may not be operations on lease(s) adjacent to competitive tract.

Coal Price Vintage - Adapted from Tract Evaluation Task Force 155,
Issue Paper 19

Issue

Vintaging of coal prices results largely from inflation. However, the manner and level of escalating the prices varies between regions and from contract to contract on a single mine. Therefore, the price vintage, especially when applied to small tracts, becomes critical largely because previously negotiated contracts tend to be lower than contracts being currently negotiated. Also, in addition to the long term contract, there is the spot market value which oscillates with short-term market variations such as strikes and economic activity. Therefore, does the Government use the applicant's price, thereby giving the Government a share in the good or poor contract negotiating capability of the potential lessee, or does the Government consider a broader base of prices?

Alternatives

A. Price received by applicant or industry nominees for coal produced from existing operations.

Pro

* Representative of real world of the applicant for hardship applications.

Con

- * Does not represent competitive situation.
- * Data may be difficult to obtain.
- * Government subsidizes operators low-coal-value contracts previously negotiated.

B. Price to be received by an applicant or a nominee based on contracts for coal in the area.

Pro

* Represents a real-world situation.

Con

* If contract previously negotiated, Government may be subsidizing operator's low-selling-price contract.

* Data may be difficult to obtain.

* Does not represent competitive situation.

C. Independently derived prices for area based on survey and technical analysis of data.

Pro

* Independently derived value.

* Representative of currently negotiated prices.

Con

* Data not necessarily representative of prices at which coal may be sold.

* Data may be difficult to obtain.

Disaggregation of Model Coal Resource Economic Value to Tract of InterestIssue

The issue of disaggregating VEMU values to the tract of interest must consider coal resource quantity and value, mining capital and operating costs, areal extent, and timing of recovery. Procedures for incorporating the timing factor of when the tract of interest is mined are of interest. Other considerations to disaggregating would be the most common practice of using coal resource quantity. However, the cost of mining is an important consideration and accordingly should be included; physical parameters, which are the basis of costs, are appropriate for this approach.

Alternatives

A. Total coal resources present.

Pro

- * Includes all coal.
- * Encourages maximum economic recovery.
- * Readily quantifiable.

Con

- * With varying coal bed thickness, it is a poor measure of reserves.
- * With varying quality, it is a poor measure of value.

B. Recoverable coal reserves.

Pro

- * Relates to coal which is commodity being leased; has a good legal basis.
- * Readily quantifiable.

Con

- * Incomplete measure of total value of coal to lessor.
- * Does not incorporate coal quantity or mining cost.
- * Does not incorporate timing of recovery.

C. Depth and/or thickness of overburden.

Pro

- * Readily quantifiable.
- * Basis for the major cost components of a mine.

Con

- * Does not relate to commodity leased or source of revenue.
- * Quality variations which may be present are not considered.
- * Value of tract, especially underground mined coal, may be only slightly dependent.

D. Surface area of unmined coal.

Pro

- * Relates to all coal to be recovered.
- * Readily quantifiable.

Con

- * Does not reflect value of coal if beds vary in thickness.
- * Does not usually reflect mining costs.

E. Consider timing and economy of recovery of coal.

Pro

- * Measures contribution of tract of interest to income stream.
- * Fairly quantifiable.

Con

- * Subject to judgment as to timing.
- * Varying choice of depreciation and depletion schedule can significantly vary results.
- with many reserves.
- * Extensive work requirements.

F. Combination of coal resources, coal reserves, and physical parameters, such as areal extent and depth burial for a underground mine, and/or quantity of overburden for surface mining.

Pro

- * Relates major physical factors of coal mining.
- * No judgment factors.
- * Generally applicable.
- * Readily quantifiable.

Con

- * Does not reflect timing of coal recovery.
- * Does not directly reflect economic factors.

Transaction and Uncertainty Costs for Small Tracts

Issue

Assessment of transactions costs and uncertainty of small tract values are factors which are analogous to formation and disaggregation of a VEMU but whose costs (or values) are not internalized.

By definition, transactions costs are a function of each transaction, therefore, the total transactions costs increase with the number of tracts. Conversely, the total transactions costs are inversely related to tract size. Similarly, the range of values of small tracts within a VEMU increases with the number of tracts and inversely with the size of tracts.

Alternatives:

A. Consider tracts as subsets of the VEMU and not make provision for transactions costs and uncertainties of value.

Pro

- * Sum of parts equal to the whole VEMU.
- * Readily quantifiable.

Con

- * Does not reflect all the firm's costs.
- * Does not reflect the reduction in values of small tracts owing to their unique uncertainties.

B. Consider small tract transactions costs.

Pro

- * Reflects firm's cost of acquiring tracts exclusive of the tract bonus or mineral cost.

Con

* Costs vary considerably and may be difficult to quantify on a tract-by-tract basis.

C. Consider small tract uncertainty costs.

Pro

*There is uncertainty as to the value of a particular tract; although collectively the values are all right.

* This variation in value is substantiated using statistical approaches.

Con

* The concept that uncertainty reduces value is a judgment factor (i.e., utility function).

* Difficult to quantify.

A series of options for assessing the aggregation coal and for disaggregation of coal lands to form a VEHU are presented along with cost and price vintaging, and factors applicable to small tracts.

The appropriate economic measures would be allocated to lands of interest in proportion to their contribution to the economic unit being modeled. This allocation would be such that the sum of the parts would be equal to the total value prior to allocation or include other costs to reflect the issues of small tracts.

The issue of coal being bypassed by mining operations is, in many instances, a lack of awareness of field operations and/or appropriate action to timely lease the coal.

The existence of isolated tracts of Federal coal must be recognized for what they are - isolated tracts of coal with a market subject to interest of the potential purchaser.

In closing, I quote Mr. Walter E. Will who, while discussing oil and gas pooling projects, presented ideas applicable to coal:

. . . "it is my opinion that it is difficult for a regulatory body to achieve the ultimate in preventing waste and protecting correlative rights in an oil or gas field or pool that is being produced on a competitive basis. . .

It is only through unit operation that the complete application of today's advanced technical knowledge concerning reservoir behavior can best be utilized in order that the greatest ultimate recovery be obtained and it is through unit operation that individual property rights can be fully protected."

REFERENCES AND GENERAL SOURCES

1. Amerada Petroleum Corporation for the Seminole-San Andres Unit, 1968, Oil and Gas Docket No. 8A-58701, Re: Conservation and prevention of waste of crude petroleum and natural gas in the Seminole (San Andres) field, Gaines County, Texas: Amerada Hess Corporation, Legal Department of Amerada Division, 20 p., 1 fig., 4-p. appendix. (Submitted to Railroad Commission of Texas Oil and Gas Division.)
2. Bilas, R. A., 1967, Microeconomic theory: A graphical analysis: New York, McGraw-Hill, 308 p.
3. Braff, A. J., 1969, Microeconomic analysis: New York, John Wiley and Sons, 295 p.
4. Fair Market Value Task Force, 1979, Fair market value of Federal coal: Concepts and procedures: U.S. Geological Survey and U.S. Bureau of Land Management, 98 p. (Unpublished report).
5. Fletcher, A. F., 1978, Mining leases and oil and gas leases—Different breeds, in Rocky Mountain Mineral Law Institute: New York, Matthew Bender and Company, p. 309-342.
6. Geehan, P. H., 1977, Fair market value estimate—Colorado competitive coal lease application C-16284: U.S. Bureau of Land Management, 15 p. (unpublished report for Government use only).
7. Interagency Land Acquisition Conference, 1973, Uniform appraisal standards for Federal land acquisitions, Wallace H. Johnson, chm.: Washington, D.C., U.S. Government Printing Office, 51 p.
8. Landis, B. A., Jr., 1979, A summary of unitization and the engineering functions in unitization, in Journal of Petroleum Technology: Society of Petroleum Engineers, p. 30-32. (Presented before the Billings Petroleum Section of AIME.)
9. Morgan, H. M., 1958, Unitizing mining properties on basis for oil and gas units, in Rocky Mountain Mineral Law Institute, 4th Annual, July 31-August 2, 1958, Papers: New York, Matthew Bender and Company, p. 388-430.
10. Pederson, J. A., 1977, Coal resource economic value: U.S. Geological Survey, 6 p. (unpublished draft for Conservation Division).
11. Pederson, J. A., Blair, T. J., Connors, F. W., and Smith, M. T., 1979, Coal resource economic evaluation, in SPE-AIME Eighth Hydrocarbon Economics and Evaluation Symposium, Dallas, Texas, February 11-13, 1979, Proceedings: Society of Petroleum Engineers Paper APE 7718, p. 62-69.
12. Regulatory Practices Committee, 1969, General rules and regulations for the conservation of oil and gas: Oklahoma City, Okla., Interstate Oil Compact Commission, 57 p.
13. Sullivan, R. W., 1958, Voluntary and compulsory pooling—Some steps and hurdles, in Rocky Mountain Mineral Law Institute, 4th Annual, July 31-August 2, 1958, Papers: New York, Matthew Bender and Company, P. 565-592.

14. Watson, William, and Bernknopf, Richard, 1979, Economic analysis of maximum economic recovery of Federal coal: U.S. Geological Survey, 33 p., 2 appendices. (Unpublished draft by the Program Analysis Office.)
15. Will, W. E., 1958, A comparative study of conservation acts and practices, in Rocky Mountain Mineral Law Institute, 4th Annual, July 31-August 2, 1958, Papers: New York, Matthew Bender and Company, p. 545-564.
16. Williams, J. E., Jr., 1972, Unitization of mining properties, in Rocky Mountain Mineral Law Institute, 17th Annual, July 8-10, 1971, Proceedings: New York, Matthew Bender and Company, p. 245-279.
17. U.S. Department of the Interior Coal MER Task Force, 1979, Preparation plan for maximum economic recovery of coal: U.S. Department of the Interior, Conservation Division, 75 p., appendices A-G.
18. U.S. Geological Survey, 1979, General Mining Order No. 1--Reporting recoverable coal reserves from Federal leaseholds, in Federal Register: U.S. Department of the Interior, v. 44, no. 181, p. 53808-53818.
19. U.S. Geological Survey and U.S. Bureau of Land Management, 1978, Tract evaluation task force 155 issue paper: U.S. Department of the Interior, 95 p. plus appendix. (Prepared for office of coal leasing and planning and coordination.)

VALUATION OF SURFACE ESTATE

C. E. Brownell

Background

A significant amount of Federal Coal land is located under privately owned surface.

Section 712 of the Surface Mining Control and Reclamation Act of 1977 (SMCRA) provides that, in cases where Federal Coal is overlain by private surface owned by a special class of owners, the Secretary may not issue a coal lease for mining purposes unless the surface owner has granted, in writing, valid consent to conduct such mining operations.

Subsequent to passage of SMCRA with its surface owner consent provision, concern developed that high or excessive payments by coal companies to surface owners for this consent would reduce the price that the federal government could receive for leasing the Federal Coal.

In an attempt to ensure that full fair market value is received for Federal Coal under private surface, the Department has adopted a policy which, it is hoped, will limit the payment for surface owner consent. The policy is that, in the processes of estimating fair market value of the Federal Coal, the actual damages, or loss in value to the private surface will be used as the allowable cost of surface owner consent.

Appraisals of the surface estates will be necessary in order to obtain the estimates of surface values to be used in the Federal Coal Valuation processes.

Any proposed lease of Federal Coal under private surface could involve all or portions of several different surface ownerships. Even though a lease may underlie only a portion of a total surface ownership, the proposed mining operation may affect the value of the total ownership. The actual loss in value then may be much greater than the fair market value of the acreage directly involved by the lease and the mining operation. Therefore, in order to properly estimate the loss in value to the surface estates, it will be necessary to make complete and separate appraisals of each ownership.

Valuation Process

Generally, the appraisals will have to be made in the same manner as one would appraise property being taken for a public purpose:

1. Estimate the value of the part of the property being taken;
2. Estimate the damage or loss in value to the remainder of the property.
3. Add the value of the part taken to the loss in value to remainder to arrive at the estimate of value of the surface estate involved or the loss in value to the total property as the result of the taking.

To consider loss in value to the total property one must first determine what constitutes the total property. In making this determination there are certain criteria to be considered. The criteria for determining what constitutes the larger parcel ^{1/} are that the parts of the property must have:

1. Unity of Ownership
2. Unity of Use
3. Contiguity

In order to ensure that the estimates of value do not reflect values that are attributable to the underlying coal, the appraisal should be based on consideration of uses which are not related to coal. It should also be based on sales of similar land which are not related to coal or which have no underlying mineral.

The estimates are derived by following the standard appraisal process using any or all of the approaches to value (Cost, Income, and Market) that are applicable. The part taken is valued as part of the whole (larger parcel) which reflects its contribution value to the whole. The damages to the remainder are estimated by consideration of changes in use and in highest and best use. The remainder is valued as viewed before the taking and then valued, as viewed after the taking. The difference between the value of the remainder before the taking and the value after the taking is the measure of damages or loss in value to the remainder. The value of the part taken added to the loss in value to the remainder is the estimate of value of the surface estate taken.

^{1/} Larger parcel is the term applied to the total ownership from which a portion is being taken.

The proposed mining operation will have a definite life span and probably will not encumber the total of the surface estate overlying the coal for the entire life of the project. The appraiser must consider what rights in the surface estate remain with the owner such as use of areas not involved by actual mining and reversion of surface use at the end of mining. The condition of the lands and potential uses during and after mining must be considered as well.

If the taking constitutes the entire surface ownership (larger parcel) the appraisal is merely an estimate of the fair market value of the land considering, of course, value of any rights remaining with the owner.

DRY RUN OF COMPARABLE LEASE APPROACH
TO ESTIMATING FAIR MARKET VALUE OF FEDERAL COAL

C.E. Brownell

The purpose of the Dry Run or Sample Appraisal was to:

1. Sample the availability of comparable lease data in an actual case;
2. Sample the availability of specific data regarding the Federal Coal resource in an actual case;
3. Test for problems that might be encountered in applying the comparable lease approach;
4. Verify the applicability of the comparable lease approach to estimating the fair market value of Federal Coal Leases.

Methodology Used in Sample Appraisal

A. Tract Selection

A tract 9 sections in size, was selected at random from a map showing known coal bearing areas in Southern Wyoming. The map did not show who owned the coal or surface estate. After the tract was selected, other maps and plats were consulted to determine the ownership of coal and surface. The description of the tract and ownership of coal and surface is as follows:

T.18N., R90W.,

Section 6;	NE ⁴ , S ² ;	Federal Coal - Federal Surface
	NW ⁴	Federal Coal - Private Surface
Section 7;	A11	Private Coal - Private Surface

T.18N., R91W.,

Section 1;	A11	Private Coal - Private Surface
Section 2;	A11	Federal Coal - Federal Surface
Section 11;	A11	Private Coal - Private Surface
Section 12;	A11	Federal Coal - Federal Surface

T.19N., R90W.,

Section 31;	A11	Private Coal - Private Surface
-------------	-----	--------------------------------

T.19N., R91W.,

Section 35;	A11	Private Coal - Private Surface
Section 36;	A11	State of Wyo.- State Surface

The tract includes 3 sections (approximately 1900 acres) of Federal Coal rights of which approximately 160 acres is under private surface. It is located 20 miles southwest of Rawlins, Wyoming in Carbon County. This places the tract some 50 miles southwest of Hanna which is more or less the center of a number of active strip-mine coal operations. The mining activity in the general Hanna area dates back to the early 1900s.

B. Obtaining Data On the Federal Coal

Bureau files were consulted to determine what if any information was available regarding the coal resource on the

Federal Lands within the sample tract.

It was discovered that seven of the nine sections were included within the external boundaries of a mining operation proposed by two coal companies under a joint venture agreement. The overall plan encompassed about 27 sections (17,000 acres +/-) of land within a checkerboard pattern of ownership of Federal, State and private lands. It included approximately 4200 acres of Federal Coal located within eight cornering, but noncontiguous sections. Approximately 960 acres of the Federal Coal is within the sample tract.

The reports submitted by the coal companies showed locations of the coal deposits and provided specific information regarding total reserves, recovery rates, test data, quality of the coal, mining methods, transportation plan, etc.

It was also found that U.S.G.S. had completed a report on the proposed mining operation. The GS report provided much the same information as the coal company report but differed slightly in some areas, such as projected reserves, recovery rate, etc.

C. Search for Comparable Leases

An abstractor was hired to search the Carbon County records for evidence of coal leases or assignments of

coal leases recorded from January 1, 1975 to the present time. The cost of these services amounted to approximately \$1400. The abstractor furnished information regarding several recent leases for uranium and other minerals, but reported that he had found no coal leases as such recorded during the prescribed period of time.

Mr. Dale Wadleigh, who assisted on the project searched the County records for earlier dates and found evidence of eight transactions dated in the period 1971 to 1974. Five of these transaction involved lands located some 35-40 miles to the southwest of the sample tract. The others were scattered about the County.

Mr. Wadleigh contacted the State of Wyoming Department of Lands to determine whether the state sections within the sample area (or the mining unit discussed earlier) were under lease. It was learned that these state sections were originally leased in August of 1968 on a 10 year lease which called for \$50 per year rental for each 1280 acres for years 1 and 2. The rental became 25¢ per acre for years 3 through 10 or \$1.00 per acre rent after any discovery of coal was made. The lease called for a royalty of 7% or 15¢ per ton minimum royalty. The lease was involved in one or more assignments.

The state lease was renegotiated and renewed for 10 years in August, 1978. The terms call for an 8% royalty with a minimum 25¢ per ton plus overriding royalties of .5% and .1666% to two interim lessees. The rental rate was 50¢/acre for years 1-5 and \$1.00/acre for years 6 and beyond. The total royalty and overriding royalty amounts to 8.666%. The rental would be a maximum of \$1.00 per acre per year.

I contacted a representative of one of the two companies involved in the joint venture - proposed mining operation. I was advised that the private coal lands within the proposed mining operation are owned by a railroad company which has an intricate corporate structure with several subsidiary companies. One company is a land resource company and another is a mineral development company. There are more or less "in house" leases and agreements between the resource company and the mineral company which call for payments to be made or credited from one company to the other. There are also agreements between the two companies involved in the joint venture - proposed mining operation. According to the information received, these companies are using a 12½% royalty rate for the "in house" leases and agreements. The representative indicated it was his understanding that the 12½% rate was adopted from rates used in oil and gas transactions.

Mr. Wadleigh, Mr. Pogue (Colorado BLM State Office who also assisted on the project) and I also considered other lease data which we had in our files. This other data had been gleaned from records and other sources in Carbon County, Utah; Emery County, Utah; Moffat County, Colorado; Rosebud County, Montana; and Powder River County, Montana. Because of the location, proximity to the sample tract, and recency of the data in Moffat County, Colorado, the appraisers felt that this data would have more general applicability to the sample tract than the other areas. All of the available data was tabulated and subjected to a limited analysis. It had been the intent of the appraisers to conduct further work, verification, and additional analyses on the Moffat County data to test its applicability to the sample tract. Unfortunately, because of the press of other high priority appraisal work by all three appraisers this was not accomplished.

Results of the Sample Project

The project showed that there was less than the ideal amount of recent transaction data, involving coal and lands in the immediate vicinity of the sample tract available. This probably could have been anticipated because of the long history of coal mining in the general area, and because of the large amount of land in railroad ownership.

It is highly probable that if the search had been extended to adjacent counties, as would be done in an actual appraisal,

additional transaction data would have been discovered. Also it is believed that, had more time been available to properly analyze the transactions in Moffat County Colorado and to obtain data which is known to exist in Routt County Colorado, it would have been found that some of this Colorado data would have applicability to the sample tract area. At least in the analysis work that was done, the appraisers found nothing to indicate that this somewhat distant data would not have applicability.

Analysis of the raw data available (from Wyoming, Colorado, Utah, and Montana) shows royalty rates that are, with the exception of recent State of Colorado leases which adopt federal minimum rates, less than 12½%. It shows an almost total absence of advance payments that could be interpreted to be bonus payments. The bonus payments that were found would have to be considered as nominal.

From this limited analysis it appears that the royalty rates for many of the leases are being derived from, or arise from consideration of factors that are not directly related to the quantity, quality, etc., of the coal itself. These factors include federal coal royalty rates and oil and gas royalty rates. If additional research in actual appraisals shows the same results, it is possible that lease data would have applicability over broad geographic areas.

Conclusions

The results of the sample appraisal was not as conclusive or definitive as had been hoped. This is primarily due to the fact that the appraisers working on the project were unable, due to previous high priority commitments, to spend the needed amount of time on the project.

This sample (because of the ownership pattern and the long history of coal activity in the area) may have exhibited some of the extremes in finding comparable data. Other areas in earlier stages of the development cycle may prove to present much easier appraisal situations.

Although the project results are not conclusive, there was nothing found that would indicate that the approach can not be worked, given the time and manpower necessary to do the work properly. The best test will be using the approach in actual appraisal situations in a number of areas over a period of time.

PROCESS OF ESTABLISHING MINIMUM ACCEPTABLEBIDS ON FEDERAL COAL LEASES

C. E. Brownell

The laws and regulations authorizing and governing sales of federal coal leases provide that such coal leases shall not be sold at less than fair market value. The minimum acceptable bid should then be established as the fair market value of the lease, or rather, the estimate of fair market value of the lease as determined by appraisal.

Using the fair market value estimate as the minimum acceptable bid is the method used by the Bureau of Land Management for establishing minimum acceptable bid prices in the competitive sales of land, timber and certain other resources which call for fair market value or not less than fair market value. It is also the method used for establishing purchase prices for lands and resources to be sold at direct, negotiated, or non-competitive sales. These practices serve as a precedent for using the estimate of fair market value as the minimum acceptable bid for coal leases.

The minimum acceptable bid (estimate of fair market value) for the proposed coal lease should then be published as part of the notice of lease offering or lease sale. All bids received or offered at the sale which fall below the published minimum acceptable bid should be rejected and returned to the bidder.

Establishing a minimum acceptable bid in this manner has several advantages:

- A. It eliminates the need to have a post sale panel go through any manipulation process to determine which bids should be accepted and which should be rejected.
- B. It will add credibility to the sale process and aid potential bidders in preparing bids.
- C. Once industry is assured that bids below the published minimum acceptable bid will be rejected, there should be an end to nuisance bids.

It has the disadvantage, of making appraisals more important than in the past, and of requiring more accountability from personnel conducting the appraisals. It should not increase administrative costs as appraisals of fair market value will be necessary anyway to ensure that no coal is sold at not less than Fair Market Value. If the estimate of Fair Market Value by appraisal is used as the minimum acceptable bid it would eliminate the need for and cost of using an additional method for establishing the minimum acceptable bid.

The fair market value estimate should be derived by following the standard appraisal process using the two approaches to value which are applicable, the Income and Market Approaches. It will also be necessary to consider the comments regarding fair market value solicited from the public as provided by the regulations.

This estimate should be derived as follows:

- A. Develop an estimate of value through the Income Approach (Discounted Cash Flow).^{1/}
- B. Develop an estimate of value through the Market Approach (Comparable Lease Approach).
- C. Consider the public comments regarding fair market value to the extent merited by the quality and validity of the comments and information presented.
- D. Reconcile the indications of value by the two approaches and the public comments. Arrive at an estimate of fair market value which becomes the minimum acceptable bid price,^{2/} or:
- E. If the estimate of fair market value falls below the minimum royalty and bonus rates established by the regulations, the regulatory minimum becomes the minimum acceptable bid price.

^{1/} This assumes that the Discounted Cash Flow process is based on premises and factors which are in keeping with the concept of fair market (value to persons generally) rather than premises which would result in Value-in Use and factors which are derived by artificial methods. These premises and factors include:

- A. The federal coal to be leased has to be considered as a separate entity and not as part of a mining unit which would include consideration of coal of other than federal ownership.

- B. Cost figures, mining methods, and other factors relating to the hypothetical mining operation must be typical of the industry and not based on an adjoining mining operation or those of a specific mining company.
- C. Profit rates, interest rates, and discount rates must be typical of the industry orderived from consideration of comparable investments having similar risks.

The Discounted Cash Flow process contemplated here differs from the Discounted Cash Flow Model used by USGS in developing the Coal Resource Economic Value (CREV). The CREV is a measure of Economic Rent which only under ideal almost unattainable conditions would coincide with FMV.

- 2/ In absence of a Discounted Cash Flow designed to provide an estimate of Fair Market Value (Not Economic Rent) the reconciliation will necessarily consist of review of the comparable lease approach and consideration of comments from the public.

COMPARABLE LEASE APPROACH TO ESTIMATING
FAIR MARKET VALUE OF FEDERAL COAL LEASES

C. E. Brownell

The comparable lease approach to estimating fair market value of federal coal leases is a variation of the Market Data Approach to value used by appraisers in estimating a wide variety of real property, personal property, or commodities.

The approach is based on the principle of substitution - a purchaser would not be justified in paying more for a property (or resource) than it would cost to acquire an equally desirable substitute property (or resource).

The comparable lease approach is a process of relating the coal lease under appraisal to comparable leases in the market.^{1/} The lease under appraisal is compared to the comparable leases for those factors which market investigations demonstrate have an effect on value or price of coal leases.^{2/}

The approach is applied following an orderly more or less standardized appraisal process which can be outlined as follows:

A. Definition of the Appraisal problem

1. Identification of the coal property to be appraised by legal description and acreage. In cases where the federal government does not hold fee simple title to the property being appraised,

this identification must include a legal description, ownership and nature of any portion of the total ownership not held by the federal government such as, surface estate, surface rights, oil and gas rights, rights to other minerals, etc. Total ownership refers to the property bearing federal coal to be leased and not the land within some logical mining unit which includes coal of other than federal ownership.

2. Identification of the rights to be appraised. Generally this will be the rights to explore for, extract, process, produce, and sell coal from the described property. May or may not include the rights to use the surface for mining or access purposes.

In valuation theory, it is not the property or resource which has value but rather the rights that go with ownership of the property or resource that have value. Therefore it is essential to know what rights are to be considered in the appraisal.

3. Identification of the terms and conditions of the proposed lease.

It is the terms and conditions of the proposed lease that will dictate the manner in which the rights to be leased are to be exercised. These may have a direct bearing on the market value of the coal being leased.

4. Date of the Value Estimate.

Inasmuch as market conditions and values may change rapidly, the

appraiser can only be responsible for a value estimate as of a specific point in time. Generally the date of valuation will be as of the last date of examination of the property by the appraiser.

5. Purpose of the Appraisal.

Inasmuch as appraisals may be made to serve many purposes, it is necessary that the appraiser and those who will use the appraisal understand and agree on the specific purpose which the appraisal will serve. In the case of coal leases, it will generally be to estimate the fair market value of the rights in the coal to be leased for a specified time and under the conditions spelled out in the lease. As mentioned under 2 and 3 above, as the rights and terms change, the value could change. Therefore it is necessary to tie the purpose of the appraisal to the rights, terms, and conditions of the lease under appraisal.

6. Definition of Value.

Inasmuch as appraisals can be made to suit several different definitions of value, it is necessary that the appraiser and those who use the appraisal understand under which definition of value the appraisal is being made. In coal leases the appraisal is to consider fair market value defined as:

"The amount in cash, or on terms reasonably equivalent to cash, for which in all probability the property would be sold by a knowledgeable owner willing but not obligated to sell to a knowledgeable purchaser who desired but is not obligated to buy." ^{3/}

or

The amount in cash, or on terms reasonably equivalent to cash, for which in all probability the rights to mine, produce, and sell coal would be leased by a knowledgeable owner willing but not obligated to lease to a knowledgeable lessee who desired but is not obligated to lease.

B. Preliminary Plan

1. Identify the data needed.

In advance of commencing field work on the appraisal it is advisable for the appraiser to identify the types of general and specific data that will be needed to complete the appraisal. In most cases the general data needed will be much the same for any coal lease appraisal. However, the specific data, particularly that pertaining to actual coal transactions may vary depending on the size of a coal tract and the rights to be appraised. For example, an appraisal involving a small tract of federal coal, federal surface with guaranteed access would call for data involving similar sized tracts leased under similar conditions (assuming that the size of the tract may have a bearing on value or price). The appraiser then, in order to make most expeditious use of his time, should concentrate his/her efforts in obtaining the type of data needed rather than collecting data at random.

2. Identify Data Sources

Based on past experience or experience of others doing similar work,

the appraiser should in advance identify those sources of data that will prove to be most helpful. The general data may come from government (any level) reports, trade journals, industry reports, etc. The specific data may be gained from county records, abstracting companies, title companies, industry representatives, brokers, lawyers, landowners, etc.

C. Data Collection and Analysis.

1. General Data - In order to develop an understanding of the market and market conditions it will be necessary for the appraiser to obtain an adequate amount of data on the national, regional, and local scale that will tend to show the economic and demand trends that exist in the coal market. There may be events taking place on an international scale such as long range oil prices and increased demand for energy worldwide that could affect the demand for and value of coal on the local scale. In the analysis phase, the appraiser must determine the direction, magnitude and duration of these trends and their probable effect on the value of the coal lease under appraisal.

2. Specific Data

The specific data needed pertains to the subject property and comparable leases. In order to compare the subject lease to market transactions, the appraiser has to have a clear and detailed knowledge of the subject property. This should include access to, location, nature and extent, physical properties, and occurrence of the coal deposit.

The data needed for the comparable transactions^{5/}, in addition to the same data listed above for the subject property, includes, verification, date of transaction, understanding of the terms and conditions of the leases, bases for payments, and if possible an understanding of the factors considered by lessors and lessees in the price negotiations.

In the analysis the appraiser will have to determine which leases are valid as indicators of value, what factors of comparison are to be used in the comparisons, etc.

D. Valuation

1. Comparison of subject coal lease to the selected comparable leases.

Ideally, the leases to be used for comparison would be of identical coal properties located adjacent to subject. However, no two properties are identical. They will differ in at least some respects. The appraiser should select those leases which are most similar to subject for comparison. The more similar the comparable leases are to the subject, the fewer the differences that need to be considered. The appraiser has to make comparisons, or adjustments, for the differences in those factors which market investigations have demonstrated to affect value or price of coal leases. It would be incorrect for the appraiser to make adjustments for factors which are in fact not considered by buyers and sellers in the market.

The appraiser cannot, with any certainty, predict in advance of

of the comprehensive market investigation the factors which should be used in the comparisons. In the market, many events can take place that will change the motivation and expectations of buyers and sellers and change the considerations in the price negotiations.

It would be misleading, in this paper, to list any factors or set of factors as suggested factors to be considered in the comparisons. To do so would imply that there are more or less standardized factors.

2. Value Conclusions

Assuming the appraiser has properly analyzed the market data and actions and weighed the differences and similarities between market data and subject, the comparisons or adjustments should lead the appraiser to a logical conclusion of value.

The process of arriving at a conclusion of value by any approach to value is a review of the steps taken previously, a weighing of the merits of the data considered, and reaching a conclusion. It is not a mathematical process in which the various indications are averaged or the numbers manipulated in some similar fashion.

E. Reconciliation of Indication of Value by Comparable Lease Approach with Indications derived by other Approaches.

The indications of value by the different approaches will usually show a

range of values. The range may be narrow or it may be extremely wide.

Reconciling these indications of value involves a process of reviewing the different approaches. The reliability of the various data that has been used in developing each approach is considered along with the inherent strengths and weaknesses of each approach.

If the indicated range of values is wide the appraiser should retrace the steps taken in each approach to determine whether some error has been made in one or more of the approaches. After the review of the approaches has been completed, the reliability of the data and the strengths and weakness of each of the approaches have been considered, the appraiser reaches a final conclusion as to the estimate of value. This estimate should either be the indication by one of the approaches or within the range of indications with most weight given to the approach that is considered to be the most reliable. This estimate should never be arrived at by averaging the indications by the different approaches.

Finally, before releasing this estimate of value, the appraiser should apply what is often referred to by appraisers as the "4th Approach" to value. That is to look at the estimate of value and what it represents in light of what he really believes knowledgeable buyers and sellers in the market would do in that situation.

Footnotes

1/ A comparable lease can be defined as a lease of similar resource, which

when subjected to an analysis of the pertinent facts, will logically indicate by adjustment and comparison the probable price that could have been obtained for the resource under appraisal on that certain date of valuation. In theory, the resource involved by the comparable lease would be, if it were available for lease at the same time as the coal lease under appraisal, in competition for the same potential buyers.

- 2/ The appraiser must guard against the proclivity to interject his/her notions into the comparisons instead of relying on the actions of buyers and sellers in the market. One must also guard against being more sophisticated than the buyers and sellers in making these comparisons.
- 3/ Uniform Appraisal Standards for Federal Land Acquisitions, pg 3.
- 4/ Transactions include leases, assignments of leases, etc.

RECOMMENDED SALE PROCEDURES

C. E. Brownell

It is recommended that coal lease sales be open public auctions, with both sealed and oral bids, conducted along the following format.

1. Publish a notice offering leases for sale.

The notice should include:

- a. Time and place for Auction.
 - b. Instructions for filing sealed bids.
 - c. Description of Auction procedures.
 - d. Minimum acceptable bid for each lease being offered.
 - e. Notification that any bids, sealed or oral, which are less than the established minimum acceptable bid will be rejected.
2. At the published time and place, all sealed bids, which have been submitted in accordance with established requirements, are opened, analyzed, and posted. Any and all sealed bids below minimum acceptable bids are identified and set aside for rejection.
 3. In multi-tract sales, establish an order or sequence for subsequent oral bidding with the tract which received most sealed bids first, next greatest number of sealed bids second, etc.
 4. Start oral bidding with highest sealed bid as the starting point. Tracts for which no sealed bids were received, the published minimum acceptable bid would be the starting point for oral bidding.
 5. At the close of oral bidding for each tract, the highest bid, sealed or oral should be identified as the successful bidder - subject to post sale adjudication and verification of the qualifications of that high bidder.
 6. The post-sale process should consist of adjudication and verification of qualifications of the high bidder and if appropriate, preparation of notification to the high bidder of being the successful bidder. This notification should include instructions to the high bidder for actions to be taken to execute the lease.

Disadvantage of this process

It could encourage prospective buyers to either submit sealed minimum acceptable bid or no sealed bids, waiting for the oral auction.

This could partially be overcome by making a sealed bid a prerequisite to subsequent oral bidding. However, such a requirement might reduce activity for other tracts as described under advantages below.

Advantages of this Process

1. It would allow potential buyers to raise their bids after learning the level of competition they were facing. Sealed bids alone more or less lock them into one price.
2. It would allow potential buyers to consider more than one tract at a sale. Potential buyers who were unsuccessful in being the high bidder for tracts offered earlier in the oral auction would be released to bid on tracts offered later in the oral auction.
3. It should tend to ensure that the best coal tracts (cheapest national cost) offered at any given sale should sell first.
4. It should eliminate nuisance bids below the minimum acceptable bid.

It is further recommended that consideration be given to use of "Continuing Sale Procedures" for sales of coal lease much in the same manner the Bureau of Land Management has used for some land sales. The procedures for coal lease sales could be as follows:

1. On the prescribed date and place, the initial sale is held. If any tracts (leases) remain unsold at the end of the oral auction, announce that sale is adjourned, and all remaining tracts will again be offered for sealed and oral bids on a specified day, usually 30 days $\pm$ hence.
2. On the specified day of the next sale date, the sale is resumed with opening of sealed bids and subsequent oral bidding. If any tracts remain after this sale, repeat adjournment with sale to be reopened again on the specified day, etc.
3. This procedure could be continued for a period of say 5 months. Then provide for over-the-counter sale for any remaining tracts for a 30 day period after which the sale would be cancelled and any remaining leases removed from sale.

The continuing sale procedure has definite advantages. It would:

1. Eliminate repeat appraisals.
2. Provide a "ready supply" of coal leases available for purchase with a minimum of added cost to the Government, thereby fulfilling our mission.
3. Encourage interest from "Brokers" or holding companies who put packages

together for later sale to producing companies. In doing so it would broaden the potential market for leases and increase competition.

4. Place the burden (on potential buyers) of keeping track of what happens on subsequent sale dates. It could encourage them to buy leases that they might otherwise not buy at a single sale. In the single sale process, a potential buyer might be interested in a lease but only if he/she can buy at a price which is totally an advantage to them. If no competition is observed, they might not bid expecting that the lease would again become available at a later date and preferably at a lower price. The continuing sale procedure might encourage that same potential buyer to buy, fearing that someone else may bid the minimum or higher on one of the continuing sale dates or pay the minimum during the over-the-counter sale period.

It could have an effect which might be considered to be a disadvantage, that of encouraging "speculation" by Brokers or holding companies. However, if one considers what has taken place in private coal markets and oil and gas, this may not be a disadvantage, particularly in leases or tracts that are of mixed ownership or smaller than economic units. It is often the work of Brokers or Speculators who through their leasing techniques put together economic units that are either sold to producing Companies or become operating properties through use of operating leases or assignments. We may be overlooking an important facet of the market for coal leases if we exclude the Brokers and Speculators.

On Estimating the Degree of Uncertainty in a Federal Mineral Lease Value Estimate

Donald J. Bieniewicz
July 26, 1979

The degree of uncertainty in its estimate of the true value of a Federal mineral lease should be considered by a firm in its preparation of a bid for the lease, and considered by the government in its decision to accept or reject the high bid for the lease. This paper explains how the commonly used Monte Carlo approach to tract evaluation does not provide an estimate of the (degree of) uncertainty in the tract value estimate, and shows how this uncertainty can be estimated.

Assume that at the time it is sold, a Federal mineral lease has a potential value distribution V with mean μ and variance σ^2 . Then the true value of the property, i.e., the maximum amount a risk-neutral purchaser should pay for the property, is μ .

Now assume that V is a function of several other random variables, X , Y , and Z . This can be expressed $V = f(X, Y, Z)$. Suppose that this relationship is too difficult to calculate analytically, i.e., even if we know the shape and parameters of the probability distributions of X , Y and Z , we cannot readily calculate the corresponding shape and parameters of V . In such a case we would use Monte Carlo techniques to find $\hat{\mu}$ and $\hat{\sigma}^2$ which are estimators of μ and σ^2 . $\hat{\mu}$ and $\hat{\sigma}^2$ are the parameters of $\hat{V}$, which is the distribution of the outputs of function $f(X, Y, Z)$ based on a limited number of random draws from the X , Y and Z distributions.

If a bidder is risk neutral, he is not concerned about the value σ^2 or its estimator $\hat{\sigma}^2$. He is, however, concerned about the accuracy of his estimate of μ , particularly because biases may exist in his estimation technique. If his technique is biased, he will be either too low or too high in his bidding on the average and will reap suboptimal long term profits. The government is also concerned about the accuracy of its estimate of μ , because it must depend on this estimate in making bid acceptance-rejection decisions.

Various techniques have been developed to reduce the error caused by the use of Monte Carlo approximation methods in the estimate of μ . In general these are called variance reduction techniques and their goal is to provide a smaller range of approximation error in $\hat{\mu}$ as an estimator of μ for the same expenditure of calculation time or effort. Note that variance reduction techniques do not reduce $\hat{\sigma}^2$ or σ^2 nor are they generally used to reduce the approximation error in $\hat{\sigma}^2$. Variance reduction techniques might less ambiguously be called mean-estimator approximation error reduction techniques.

Now consider the case where the distributions of X , Y and Z are unknown, but can be estimated. Suppose we make our best estimates of the distributions of X , Y and Z and then use Monte Carlo methods to solve for $\hat{\mu}$ and $\hat{\sigma}^2$. This is the common approach to lease evaluation. Now the question of most importance to us or a risk-neutral bidder is how good is this estimate of μ , i.e., how close is

$\hat{\mu}$ to the true value of the lease, μ ?* Unfortunately, the above approach does not yield this information. Because only a single set of X , Y and Z distributions are used, in effect, the common Monte Carlo approach to lease evaluation provides only a single estimate of the true value of the lease, μ . What is needed is an estimate of the variance of $\hat{\mu}$, our estimator of true value μ .**

One way to get an estimate of the variance of $\hat{\mu}$ is to change how we think of the input distributions in our Monte Carlo model. Instead of inputting our best estimates of the distributions of X , Y and Z , we now input our best estimates of the probability distributions of our estimates of $\bar{X}$, $\bar{Y}$ and $\bar{Z}$, which are the true means of the X , Y and Z distributions. We must also hope that μ is approximately equal to $f(\bar{X}, \bar{Y}, \bar{Z})$. The output of the Monte Carlo model will now be the desired estimate of the distribution of $\hat{\mu}$, i.e., the variance output is now the estimated variance of our estimator of true value μ , and the mean output is the mean of our estimator of μ . If we choose to use the mean of the Monte Carlo output (call it $\hat{\mu}_1$ to distinguish it from our original estimator of μ) as our estimator of μ , then we can consider the variance output to be a measure of the uncertainty of this estimate of μ .

* Assume the use of variance reduction techniques and many sets of random draws from X , Y and Z so that the error from the approximation technique is insignificant and the uncertainty of the Monte Carlo outputs is based only on the uncertainty of the estimated input X , Y and Z distributions.

** Note that σ^2 is an estimate of the variance of V and not an estimate of the uncertainty of our estimate of true value μ .

If the calculated values of $\hat{\mu}$ and $\hat{\mu}_1$ are found to be very close, then they can for practical purposes be considered to be the same estimator and that the estimated variance of $\hat{\mu}_1$ applies to either. However, it is possible that $\hat{\mu}$ and $\hat{\mu}_1$ will differ considerably, especially if μ is not approximately equal to $f(\bar{x}, \bar{y}, \bar{z})$. In this case, the original estimator of μ , $\hat{\mu}$, may be preferred. However, the Monte Carlo outputs for the $\hat{\mu}_1$ case can still prove to be useful. By assuming that the relationship between $\hat{\mu}$ and its variance is similar to that of the relationship between $\hat{\mu}_1$ and its variance, the variance of $\hat{\mu}$ can be estimated.

To summarize, because μ , the mean of the potential value distribution V , is the true value of a lease at the time it is sold, the uncertainty in the estimated value of μ is the proper major uncertainty for a risk-neutral bidder to consider in his bidding decisions or for the government to consider in its bid acceptance-rejection decisions. This uncertainty is not estimated in the usual Monte Carlo tract evaluation procedures, the more common uncertainty estimated being σ^2 which is the variance of V . The degree of uncertainty in the estimate of μ can be estimated, however, using a slight variation of the traditional Monte Carlo approach. Where V is a function of several random variables such as X , Y and Z , instead of using the estimated distributions of X , Y and Z in the Monte Carlo model, the estimated probability distributions of the means of X , Y and Z are used as model inputs. Then the variance of the model outputs provides a measure of the uncertainty of the estimate of the true value of the lease, μ .

Appendix: Calculation of the Probability Distribution of the
Expected Internal Rate of Return on Investment

This paper explained how to estimate the uncertainty in a Federal tract value estimate in terms of a probability distribution of mean present value based on a given discount rate. However, in order to be able to consider this uncertainty in the government's bid rejection procedure, it may be preferable to have this uncertainty expressed as a probability distribution of the expected internal rate of return (ROR) on investment.

This latter distribution would be calculated using the same basic Monte Carlo approach as would the former. As before, our best estimates of the probability distributions of $\bar{x}$, $\bar{y}$ and $\bar{z}$ would be input into the Monte Carlo model. However, instead of calculating the present value of each random set of $\bar{x}$, $\bar{y}$ and $\bar{z}$ values during each Monte Carlo loop, the computer should iterate until it finds a discount rate that yields a zero present value for each set of $\bar{x}$, $\bar{y}$, and $\bar{z}$ values. This discount rate is the internal ROR of that loop. The internal ROR from each loop should be saved and after a sufficient number of loops, the saved RORs should be printed out in the form of a probability density. This probability distribution reflects our estimation of the accuracy with which we are able to estimate the average rate of return of the lease.

AN ANALYSIS OF ALTERNATIVE METHODS
FOR ESTIMATING THE EXPECTED ECONOMIC RENT
OF A FEDERAL COAL LEASE

Donald J. Bieniewicz

Office of Policy Analysis

U.S. Department of the Interior

Draft: October 17, 1979

Introduction and Summary

The most important factor for use in determining the minimum acceptable bid, also known as the reservation price, for a Federal coal lease is the government's estimate of the expected economic rent, in present value terms, of future coal production from the lease. Because of the analytic intractability of the general problem, the most common approach to estimating the expected economic rent of a mineral lease is Monte Carlo simulation. However, in some cases, the expected rent can be estimated without resort to the usually elaborate simulation techniques.

In keeping with this latter observation, this paper presents an alternative to utilizing Monte Carlo simulation for estimating the expected economic rent of a Federal coal lease: a direct application of the expected value operator to the general function representing the economic rent of a lease. It is shown that, for coal, the expected rent equals the general rent function evaluated at the point where all of the function's arguments, such as price and cost, are equal to their individual expected values. This equivalence allows the expected rent to be estimated via a single computation. This equivalence also allows for Monte Carlo methods to be employed in a more beneficial way than the usual; i.e., instead of also providing an estimate of the variance of the rent which is not a particularly useful output, Monte Carlo methods can instead be utilized to provide an estimate of the accuracy of the government's estimate of the expected rent which is the second most important factor for use in determining reservation prices.

The paper begins by defining the term "expected value" and describing the properties of the expected value operator. The use of the expected value operator is then compared to other methods of calculating the expected value. Next, the general function for the economic rent of a mineral lease is presented. This rent function is then reformulated and simplified, based on the specific economic characterization of coal production, into a form suitable for evaluation via the expected value operator. A second general formulation for economic rent, based on slightly different assumptions, is developed and similarly evaluated.

The Expected Value Operator

In mathematical statistics, the expected value, or mean value, of a discrete random variable is defined to be the sum of the possible values of the variable multiplied individually by their likelihood of occurrence. In more common terminology, the expected value is referred to as the weighted average.^{1/} The expected value of a function of several discrete random variables is defined similarly to be the sum of the values of the function, when summed over all possible combinations of the component variables and multiplied individually by the likelihood of occurrence of each combination. In the case of continuous random variables, the expected value of a function is the multiple integral of the product of the function and the probability densities of its arguments.

^{1/} Introduction to Probability Theory, by Paul G. Hall, S.C. Port, and C. J. Stone, p. 81, MacGraw-Hill, Boston, 1971.

Finding the expected value of a function of more than one variable can be simplified by the use of the expected value operator E having the following functional properties:^{2/}

For constants a and b , for random variables X and Y , and for general functions $f(\cdot)$ and $g(\cdot)$:

$$E[a] = a$$

$$E[X] = E[X]$$

$$E[aX] = aE[X]$$

$$E[af(X)] = aE[f(X)]$$

$$E[aX + bY] = aE[X] + bE[Y]$$

$$E[af(X) + bg(Y)] = aE[f(X)] + bE[g(Y)]$$

$$E[aXY] = aE[XY]$$

$$E[af(X)g(Y)] = aE[f(X)g(Y)]$$

If X and Y are independent random variables, then the last two relationships can be simplified further:

$$E[aXY] = aE[XY] = aE[X]E[Y]$$

$$E[af(X)g(Y)] = aE[f(X)g(Y)] = aE[f(X)]E[g(Y)]$$

^{2/} See Introduction to the Theory of Statistics, Third Edition by Alexander M. Wood, F. A. Graybill, and D. C. Boes, p. 70, 160, McGraw-Hill, New York, 1974.

Suppose we wish to find the expected value of a function, say $h(\cdot)$, of several random variables, say X , Y , and Z . From the above properties, we can easily show that if we know the individual expected values of X , Y , and Z , and know that X , Y , and Z are independent, and know that $h(\cdot)$ contains no fractional or multiple powers of X , Y , and Z , then we can directly calculate the expected value of $h(\cdot)$ by simply substituting $E[X]$, $E[Y]$, and $E[Z]$ in $h(\cdot)$ in place of X , Y , and Z , respectively. This relationship is expressed by the following equation:

$$E[h(X,Y,Z)] = h(E[X],E[Y],E[Z])$$

We wish to stress that the above equality does not hold in general; it is guaranteed only when two conditions hold: (1) the random variables in the function are independent, and (2) the random variables are raised only to the first power when they appear.

Examples: $h(X,Y,Z) = aXY + bYZ + cXYZ$

meets the sufficient conditions.

$$j(X,Y,Z) = (aXY+bZ)X = aX^2Y + bZX$$

does not meet the sufficient conditions.

When a function does not meet the sufficient conditions for direct calculation of its expected value from the expected values of its component variables, it may be necessary to rely on analytic (calculus-based) techniques, or, as a last resort, approximation techniques, such as numerical methods or Monte Carlo simulation, in order to determine its expected value. The increasingly common use of Monte Carlo approximation methods to estimate the expected rent of mineral leases is because the time dimension and the typically non-linear cost elements in the rent function cause the general problem to be analytically intractable. However, the more direct methods of calculation noted above are preferable, because of their simplicity and accuracy, whenever they are feasible. Thus, one should not be reassured by the use of Monte Carlo techniques in rent estimation, but should be concerned about the accuracy of the expected values so estimated, especially if no so-called variance-reduction techniques (that are actually approximation-error-reduction techniques) are used.

Application to Federal Coal Lease Evaluation

In Federal coal lease evaluation, we wish to be able to find the expected value of the following general function for the economic rent of a lease:^{3/}

$$V = V(\vec{P}, \vec{Q}, \vec{C}(\vec{Q})) = (\vec{P} \times \vec{Q} - \vec{C}(\vec{Q})) \cdot \vec{D}$$

Where

V is the economic rent in present value terms.

$\cdot$ denotes a vector over time of length $N+K$.

N is the production life of the mine, in years.

K is the number of years from the lease sale until the start of coal production.

$\vec{Q}$ is a vector of (the quantity of) production in each annual period, with total production Q being its sum.

$\vec{P}$ is a vector of annual prices per unit of production, expressed in real terms; i.e., adjusted for inflation.

$\vec{C}(\vec{Q})$ is a vector of annual costs (both development and production costs) as a function of the vector of production, expressed in real terms.

$\vec{D}$ is a vector of appropriate annual discount factors.

^{3/} A more complete formulation including taxes and royalties appears in Appendix A. Because the additional elements add no content to the presentation and do not affect the conclusions, they have been dropped from the rent function in order to simplify the exposition.

If the selling price does not change over time,^{4/} then the vector symbol over P can be dropped; thus:

$$V = V(P, \vec{Q}, \vec{C}(\vec{Q})) = (\vec{PQ} - \vec{C}(\vec{Q})) \cdot \vec{D}$$

Assuming a constant rate of production over the production life of the mine, and, if over the range of likely production rates, the cost vector $\vec{C}(\vec{Q})$ is proportional to Q ,^{5/} then:

$$V = V(P, Q, \vec{C}) = (\vec{IPQ/N} - \vec{CQ}) \cdot \vec{D} = (\vec{IP/N} - \vec{C}) \cdot Q\vec{D}$$

Where

$\vec{I}$ is a vector of indicator variables equal to 1 if the year is $K+1$ to $K+N$, equal to 0 otherwise.

Q/N is the annual rate of production in years $K+1$ to $K+N$.

$\vec{C}$ is the vector of annual costs proportional to Q .

^{4/} This is a reasonable assumption if it is foreseen that the coal purchase contract will contain a clause to adjust the F.O.B. price per ton for inflation, thus maintaining a constant real price through time.

^{5/} We are assuming that the mine will be developed in such a way that essentially all scale efficiencies are achieved, so that somewhat larger, or smaller, rates of production will not significantly change the unit production cost. Note that this can be assumed to hold even if we are quite uncertain as to what the actual production cost will be, as long as we know that whatever the cost turns out to be, it will be inelastic over the range of likely production rates projected for the mine.

Assuming that P , Q and $\hat{C}$ are independent random variables, with K , N (and thus $\hat{I}$), and $\hat{D}$ constants and noting that the arguments of the function are all of power one, then:

$$\begin{aligned} E[V] &= E[V(P, Q, \hat{C})] \\ &= V(E[P], E[Q], E[\hat{C}]) \\ &= (\hat{I}E[P]/N - E[\hat{C}]) \cdot E[Q] \hat{D} \end{aligned}$$

Thus, $E[P]$, $E[\hat{C}]$, $E[Q]$, K , N , and $\hat{D}$ can be used to solve directly for $E[V]$, without the need for Monte Carlo approximation methods.

One may wonder about the sensitivity of this determination that expected values can be used as inputs, to the assumption that N is a constant, i.e., that the production life has no inherently random element. Actually, the stated conclusion is unaltered by variability in N as long as the annual production rate Q/N is unaffected by changes in N .^{6/} But in this case, Q and N are not independent, so we should reformulate the problem as follows:

N is the production life in years, a random variable, independent
of P and $\hat{C}$.

R is the annual rate of production, equal to Q/N , independent
of Q , N and $\hat{C}$.

^{6/} This would be the case where the production rate and the mine life are more likely to be dictated by contractual demands than by geological considerations.

Then

$$V = V(P, N, R, \hat{C}) = (\hat{I}P - \hat{C}NR) \cdot \hat{D} = (\hat{I}P - \hat{C}N) \cdot \hat{R}\hat{D}$$

and

$$\begin{aligned} E[V] &= E[V(P, N, R, \hat{C})] \\ &= V(E[P], E[N], E[R], E[\hat{C}]) \\ &= (E[\hat{I}]E[P] - E[\hat{C}]E[N]) \cdot E[R]\hat{D} \quad 1/ \end{aligned}$$

Using $E[P]$, $E[N]$, $E[R]$ and $E[\hat{C}]$ in the above equation, $E[V]$ can be evaluated directly, without having to use Monte Carlo approximation techniques.

By combining the above approach and Monte Carlo methods, the degree of estimation error in the government's expected rent estimates, caused by subjective assessment, can be estimated. Subjective assessment means that $E[P]$, $E[N]$, $E[R]$, $E[\hat{C}]$, and $E[\hat{Q}]$ are not known with certainty. In fact, we may be able to state our uncertainty about these expected values in terms of probability distributions for $E[P]$, $E[N]$, and so forth. In this case, it would be useful to input these latter probability distributions into a Monte Carlo model using one of our two expected value formulas, in order to provide an output probability distribution on our estimate of $E[V]$. The mean of the output distribution would be a new, unbiased estimator of

$1/\hat{I}$ is now a random variable, because it is a function of N ; however, because $\hat{I}$ is a function only of N , it is independent of P and R , and thus its expected value can be factored out, as shown. See appendix B for a method of calculating $E[\hat{I}]$.

$E[V]$, and the variance of the output distribution would provide a measure of the degree of estimation error that exists in our estimator of $E[V]$; thus providing two of the most critically important factors for the proper setting of reservation prices in Federal coal leasing.

V-156

Appendix A - A More Complete Rent Value Function Including Taxes and Royalties

$$V = V(P, Q, \hat{C}) = -BD_1 + BT_1 + (\hat{I}P(1-S)/N - \hat{C}) \cdot \hat{Q}DT_2$$

This form of the rent value function incorporates the following additional constants into the value equation:

B is the cash bonus.

D_1 is the discount factor to account for the staggered bonus payment.

T_1 is the discounted proportion of the bonus payment recaptured by the lessee through tax credits on the bonus payment.

S is the fixed royalty rate as a fractional share of production.

T_2 is the fraction of net revenues retained by the firm after taxes.

$$\begin{aligned} E[V] &= E[V(P, Q, \hat{C})] = V(E[P], E[Q], E[\hat{C}]) \\ &= -BD_1 + BT_1 + (\hat{I}E[P](1-S)/N - E[\hat{C}]) \cdot E[Q]DT_2 \end{aligned}$$

Actually, we wish to know the bonus payment that would yield a zero expected value of V. Setting $E[V] = 0$, and solving for B we get:

$$B = (\hat{I}E[P](1-S)/N - E[\hat{C}]) \cdot E[Q]DT_2 / (D_1 - T_1)$$

Appendix B - How to Calculate $E[\vec{I}]$

Let $G_N(n) = \text{Prob}[N \leq n]$ be the known cumulative probability distribution function for random variable N .

K is assumed to be known.

I_i is the i^{th} element in vector I .

I_i is equal to 1 if i is from $K+1$ to $K+N$, and is equal to 0 otherwise.

Now

$$\begin{aligned} E[\vec{I}] &= E\{[I_1, I_2, I_3, \dots]\} \\ &= (E[I_1], E[I_2], E[I_3], \dots) \end{aligned}$$

Thus $E[\vec{I}]$ can be found by finding the expected value of each element separately.

For each element with $i < K+1$, $E[I_i] = 0$.

For each element with $i \geq K+1$, we find $E[I_i]$ as follows:

$$\begin{aligned} E[I_i] &= \text{Prob}[i \leq K+N] \times E[I_i | i \leq K+N] + \text{Prob}[i > K+N] \times E[I_i | i > K+N] \\ &= \text{Prob}[i \leq K+N] \times 1 + \text{Prob}[i > K+N] \times 0 \\ &= \text{Prob}[i \leq K+N] \\ &= \text{Prob}[i - (K+1) \leq N] \\ &= 1 - \text{Prob}[N \leq i - (K+1)] \\ &= 1 - G_N(i - (K+1)) \end{aligned}$$

Thus, all elements of $E[\vec{I}]$ can be solved for based on the known cumulative probability distribution for random variable N .

**FAIR MARKET VALUE
AND THE CHOICE OF A
CASH FLOW DISCOUNT RATE**

**Alan R. Dickerman
Program Development Staff
Office of Coal Management
U.S. Bureau of Land Management**

October, 1979

(Prepared as a member of the Secretary's Fair Market Value Task Force)

FAIR MARKET VALUE AND THE CHOICE OF A CASH FLOW DISCOUNT RATE

Background

The purpose of employing a discounted cash flow analysis to an investment problem is to account for the time dimension of the problem. In effect, the answer to the following question is obtained; is the future flow of returns significantly greater than operating costs to pay off the contemplated investment and still yield an acceptable profit? A direct application of the technique by a prospective lease bidder in determining his bid is clearly to be expected in one form or another, and it is only a small step to extend the application of the technique from a question of profit to a question of resource value and production simulation.

In determining profit potential, future returns are subjected to compound discounting to account for interest on borrowed money, risk, and return on invested capital (usually at a rate equal to the return of the next best investment opportunity). When the technique is transferred to a question of value, the discount rate can take on a normative dimension not present in the corporate application, i.e., what should the cost of money be, what are the normal risks involved, and most importantly what ought the return be to the entrepreneur's investment? Using a relatively low discount rate will result in minimal costs and returns being imputed to investment with correspondingly larger residual economic rent being computed in the analysis. In a competitive market, this rent would normally accrue to the resource owner as auction participants bid away the "surplus" value down to the lowest return they are willing to accept on their investment. Using a relatively high discount rate would of course provide for generous returns to the investor, but drive the residual

resource value toward zero or below. Estimating in-place resource value by the discounted cash flow method is, therefore, highly dependent on determining the proper discount rate exogenously from the model.

At this point a careful distinction must be made regarding the basis for judging what constitutes a proper discount rate to be employed in a discounted cash flow model. Much literature has been written regarding the proper rate for public investment analysis in a benefit-cost context; however, in the present case we are not considering expenditure of public funds for coal development, but rather we are attempting to simulate "typical" private development for the purpose of estimating a residual portion of income over the normal costs and returns to the factors of production.

In building generalized models for the purpose of simulating industry production and pricing behavior it has been customary to specify a discount rate as a given part of the cost structure, thus leaving sale price as the computed value to bring about equilibrium. Presumably, the model builders consider the resulting relationship between discount rate and price to be reasonable. A recent study of this type used rates between ten and sixteen percent (Romani, 1977), see Table 1. Another modeling effort (Rapoport, 1978) postulated a fifteen percent discount rate for a base run, but tested the sensitivity of coal supply to changes in the discount rate.* The results indicated practical insensitivity between eight and twenty-two percent;** at higher discount rates, coal

* Similar concerns have been analyzed by the fair market value task force (see paper by Bernknof and Watson).

** This model is a "national/rest-of-world" model and therefor assumes uniform rate changes throughout the nation; if discount rates were applied discriminately by region, there of course would be greater sensitivity in any given region.

Table 1: Typical Discount Rates Used for Surface Mine Simulation.

Mine Type and Location	Discount Rate (%)	Rate/Price Ratio
Small contour mine, Appalachia	10	0.6
Large area mine, N. Dakota	12	2.9
Medium contour mine, East Rgn.	15	2.1
Large area mine, Midwest	15	2.3
Open pit mine, N. Great Plain	15	4.2
Open pit mine, N. Great Plain	16	4.9

Source: Romani, R.V. et. Al.: Application of a Total System Surface Mine Simulator to Coal Stripping; Penn. St. Univ., Sept. 1977.

production gave way to imported oil. As stated earlier, the discount rate is a composite figure beginning with the cost of capital.

Setting a Discount Rate

In reality, the cost of capital to any individual firm depends upon the company's access to internal funds vis a vis the need for bank funds. The cost of internal funds is the rate of return in the next best investment opportunity. Therefore, the corporate position of the firm — as an oil subsidiary, metal mining subsidiary, or coal mining corporation — is more significant in setting the company's planned rate of return than are short term changes in bank lending rates.* However, such information on individual corporate behavior at this level of detail, even if available, would not seem to be a proper basis for estimating value of a public coal deposit. Bank lending rates should therefore be used as the cost of capital component in a discount rate. A telephone survey selected from a list of lending institutions active in coal mine financing (see Appendix 1 for list), indicated that mining companies were charged the prime rate plus a one to five percent risk factor.** Risk was judged in terms of the reliability of the coal deposit estimate, not in terms of the company itself. At the present time (October 1979) the prime rate is thirteen and one half percent, indicating the cost of capital in the discount rate might range from this amount to eighteen percent or more depending upon the risk associated with a given deposit. It is important to note that the risk referred to here is a surcharge above prime actually charged by lenders in the market.

- * Also, some companies may be willing (or forced) to accept returns on sunk capital (partially depreciated coal mining equipment) which are less than either internal or market rates for liquid capital.
- ** Some banks indicated they charged a percent of prime, such as 105 to 115 percent of prime, rather than an add-on charge for risk.

In addition to the cost of capital (whether paid to banks or secured internally) there exists a "normal" profit which can be expressed as a ratio to investment — a rate of corporate net return — earned on all assets and which any new investment should yield its share. Historically, between 1950 and 1970, the coal industry has averaged about a one and one-tenth percent annual growth* which can be related to a five percent rate of profit (Newcomb, 1979). In more recent times, an average of eighteen firms showed a before tax profit to total asset ratio of seven and eight-tenths percent in 1973; the same ratio for 1977, averaging sixty-nine firms, was nine and two-tenth percent (Morris Assoc., 1979). Higher rates of net return are typically associated with industries engaged in expansion cycles.

Profits, or net returns, as used here constitute a return over and above direct costs and in effect become retained earnings — a major internal source of future growth capital. While it is normal for a firm to strive for, and to some degree succeed in, obtaining such profits, it is debatable whether such returns should be explicitly incorporated into the discount rate for evaluating public resources. If they are not included, while in fact they exist in the private sector, then developers of public coal will be penalized relative to developers of private coal.

Based upon the above discussion the following cash flow discount rate formula is suggested:

Discount Rate = Prime Rate + Risk Factor + Corporate Net Return

* Albeit, with wide variation around the mean.

Use of such a discount rate in a discounted cash flow analysis should yield a valid estimate of the residual fair market value of a coal deposit. Table 2 displays some representative rates as they might be established for any given tract.

Currently, the Geological Survey's discounted cash flow model (see Appendix 2 for brief description) uses current prices for coal, current (new) prices for mining equipment, and a discount rate based on guidance contained in Office of Management and Budget Circular A-94 (March 1972). The discount rate formulation suggested above would appear to be a modification well suited to the assumptions of current prices and new mining equipment.* There is, however, an alternative and more traditional method of establishing a discount rate.

The traditional method of setting a corporate discount rate is to apply different rates to the internal (equity) portion of capital and the borrowed (debt) portion of capital; applying a tax adjustment factor to the latter portion (see Appendix 3 for formula). While this is a straightforward application of principals to the individual firm, it is not easily transferable to the typical (but hypothetical) mining operation used to evaluate public resources. In order to apply this method to a generalized model, the following issues would have to be resolved.

* Proposed tax computation adjustments for inflation effects would not affect these assumptions.

Table 2: Representative Discount Rates Computed from Suggested Formula.

Policy and Risk Option	Prime Rate ^{1/}	Risk Factor	Corp. Net Return	Discount Rate
Zero Corporate Profit				
Risk free tract	13.5	0	0	13.5
Moderate risk tract	13.5	2	0	15.5
High risk tract	13.5	5	0	18.5
Average Corporate Profit				
Risk free tract	13.5	0	5	18.5
Moderate risk tract	13.5	2	5	20.5
High risk tract	13.5	5	5	23.5
Growth Corporate Profit				
Risk free tract	13.5	0	10	23.5
Moderate risk tract	13.5	2	10	25.5
High risk tract	13.5	5	10	28.5

^{1/}
As of October 1, 1979

1. Equity/debt ratio. What is the proper proportion between equity and debt? Should the ratio vary between mine type (surface and underground) and/or between geographic regions, and how far does one pursue this line of inquiry before the generalized model becomes corporate specific?
2. Equity rate. what is the proper rate of return on equity? Should it be the current (past year) rate, an average past rate, or a planning rate? Mine type and regional questions also apply.
3. Debt rate. At what rate should the debt portion be charged? Should the prime plus resource risk (current cost) rate be used thereby implying new debt; or should the debt be assumed partially or wholly incurred, in which case a corporate bond rate would be appropriate, but of what maturity?
4. Tax rate adjustment. This is the only issue quickly dispensed with, the tax rate should clearly be that which is assumed for the model as a whole. Answers to these questions cannot be indisputably arrived at by a collection of facts, since the receiving model is not corporate specific. Table 3 provides some representative rates based on the traditional formula and common assumptions; as can be seen, this discount rate could vary roughly between six and fifteen percent.

Inflation

A final note on the role of inflation may be in order. In principal, the discount rate should conform to the over all treatment of inflation in the discounted cash flow model; in the Geological Survey model this would mean inflation-free, since prices and costs are current and held constant throughout the time cycles of the model. The "current" cost of money

Table 3: Representative Discount Rates Computed
From Traditional Formula 1/

Rate Description	Equity Rate 2/	Debt Rate 3/	Discount Rate
Low Range	4.4	13.5	6.0
Median Level	12.7	15.5	10.2
High Range	20.6	18.5	14.6

1/ Formula 1b, Appendix 3 using a median equity proportion of 43% (Morris Assoc. 1978) and a tax rate of 46%.

2/ Using accounting data for 69 firms (Morris Assoc., 1978).

3/ From Table 2.

(interest rate), however, contains a market estimate of long term inflation. In the suggested discount rate formulation, the market rate provides the basis of the discount rate and is considered justified as the current cost of financing new equipment. In the traditional formulation, the market rate enters as the debt rate. In either case, a long term bond rate could be used instead of the prime rate (as used in the examples), if it were assumed the typical mining operation would raise its own capital rather than go to a lending institution. It is not considered appropriate to adjust a discount rate for inflation by means of a common inflation index (such as the consumer price index), since such indexes are based on the prices of goods and services -- the price of money is best expressed in the financial markets.

Appendix 1

Selected Financial Institutions Active in Coal Mine Financing

Bank of America (cal.)

Chase Manhattan (N.Y.)

Chemical Bank (N.Y.)

Citibank (N.Y.)

Continental Bank (Chicago)

Irving Trust (N.Y.)

Manufactures Hanover Trust (N.Y.)

Morgan Guaratee (N.Y.)

Republic National Bank of Dallas (Tex.)

Appendix 2

Discounted Cash Flow Model for Publicly-owned Coal Resources
(Abstracted from Pederson, et. al., 1979)

The U.S. Geological Survey Coal Resource Economic Evaluation

Procedures were developed to estimate the economic value of publicly-owned coal resources. These procedures are used to determine the value of competitive coal tracts, lease modifications, and land exchanges in addition to assessing commercial quantities for preference right lease applications. The methods currently used in performing tract evaluations are the comparable sales analysis and the income approach. The comparable sales analysis considers recent transactions in the vicinity of those lands being evaluated. The income approach, or discounted cash flow (DCF), uses the annual costs and revenues resulting in the development and production of the coal resource on the tract being evaluated to determine net present value. The DCF model portrays the time life cycle, which is divided into four phases: predevelopment, development, production, and post-production, with appropriate activities defined for each phase. The model is designed so that the duration of each phase can be varied independently of the other phases in the project's life. All outlays of funds over the life of the project, from predevelopment to post-production, are grouped into appropriate cost categories. Revenue is calculated using the price of coal applied to the production schedule. The annual cash flows are then discounted using an appropriate discount rate and summed to obtain net present value.

Assumptions

The coal tract evaluation model is based upon the following assumptions:

- 1) The USGS, Conservation Division, resource and reserves determination procedures (USGS-USBM Bulletin 1450B9) will be used in evaluating

tracts for competitive lease sale or for potential preference right lease applications.

2. The Tract Resource and Development Summary Reports or preliminary Mining Plans when available, reflect tract geological and environmental conditions as well as the actual manner in which the coal will be mined, the lands reclaimed, and method of mining.
3. Developed lands will be restored to conditions representative of prior use.
4. The basis for royalty collection and pre-sale evaluation are determined from the selling price of coal at the point of shipment.
5. The evaluation is based upon the project alone, thereby disregarding financing considerations and/or financial policies of the firm.
6. The mining operation is conducted by a taxable corporation in a profit-making position.

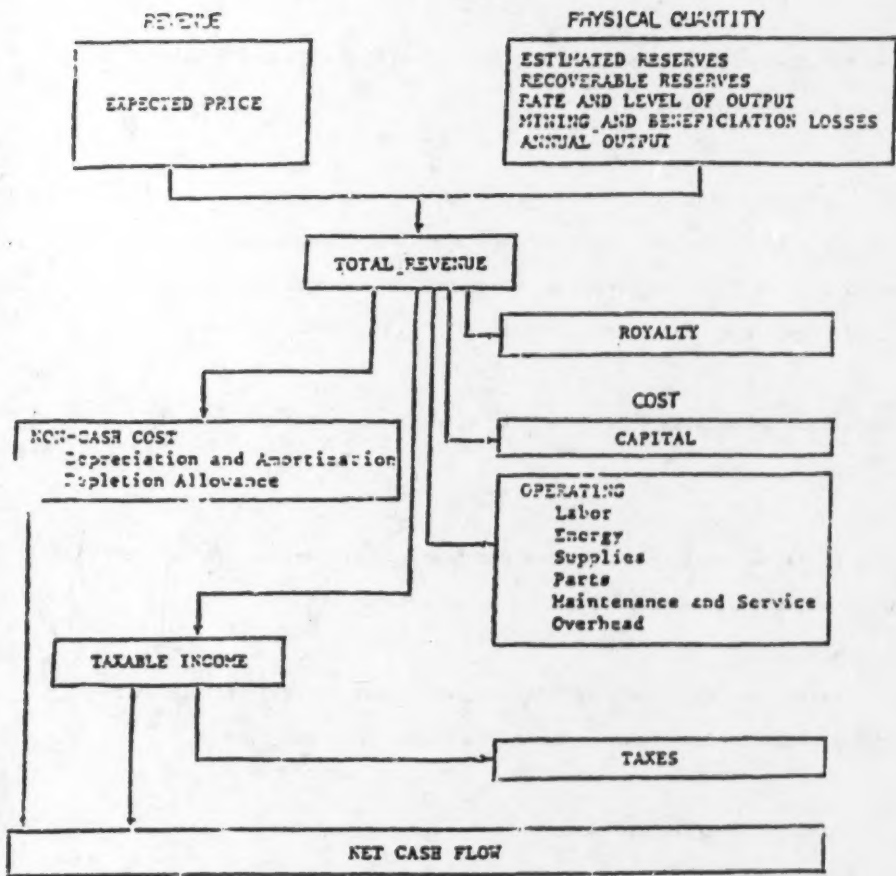


Figure 1.—Data categories (Adapted from Rudavsky (1977))

"Reprinted from "Economic Feasibility Studies in Mineral and Energy Industries" Part I, Mineral Industries Bulletin, Vol. 20, No. 3, May 1977, by Rudavsky, Oded, by permission of the Colorado School of Mines".

Appendix 3

Traditional Discount Rate Formulation

The following formula can be considered standard, based on the traditional cost of capital approach (ICF, 1976).

$$1a) \quad DR = (E)(R1) + (D)(R2)(1-t)$$

Where:

DR = discount rate

E = % of equity capital

D = % of debt capital

R1 = cost of equity capital

R2 = Cost of debt capital

t = tax rate

If accounting data were used, such as that readily available on a national basis (Robert Morris Assoc., 1978), to estimate the above components, the formula could be modified as follows:

$$1b) \quad DR = (E)(R1)(t) + (D)(R2)(1-t)$$

Where:

DR = discount rate

E and D are computed from the "debt to net worth" ratio

R1 = "X profit before tax to net worth" ratio

R2 = prime or corporate bond rate

t = tax rate

List of References

1. ICF, Inc.: Cost of Capital for Unregulated Industries; Washington, D.C., July, 1976.
2. Newcomb, Richard; "Modeling Growth and Change in the American Coal Industry," Growth and Change; January, 1979.
3. Office of Management and Budget; Circular No. A-94; Washington, D.C., March, 1972.
4. Pederson, John A. et. al.; Coal Resource Economic Evaluation; (February, 1979).
5. Rapport, L.A. and W.R. Hibbard Jr.; "Representation of the U.S. Coal Industry in Context of Integrated Long-Range Energy Modeling," Materials and Society; U.K., 1978.
6. Robert Morris Associates; Annual Statement Studies; Philadelphia, 1978.
7. Romani, R.V. et. al.; Application of a Total System Surface Mine Simulator to Coal Stripping; Penn. St. Univ., Sept. 1977.

WRITTEN COMMENTS ON FAIR MARKET VALUE

RECEIVED BY THE TASK FORCE

(see also transcript of Denver town
meeting; November 1, 1979)



Western Fuels Association, Inc.

1001 L - GENERAL MANAGER
 1001 L - SECRETARY
 1001 L - TREASURER
 1001 L - BOARD OF DIRECTORS

November 5, 1979

BOARD OF DIRECTORS

President
 Fort Morgan, Colorado

Vice President
 Lambert, Montana

Secretary-Treasurer
 New Roads, Louisiana

Vice Secretary-Treasurer
 Thomson, Colorado

Siemrock, North Dakota

Winnafors, Louisiana

Kansas City, Kansas

Silvestro, Missouri

Honorable Cecil D. Andrus
 Secretary
 Department of the Interior
 Washington, D. C. 20240

Dear Mr. Secretary:

Thursday of last week, I attended and spoke as a public witness to the "Fair Market Value" Task Force at its meeting in Denver, Colorado. I enclose a copy of my prepared statement for your convenient reference.

Obviously, the presentations made by the government employees and the outside expert commentators were the product of a lot of talent and effort. Unfortunately, that talent is forced to consider the wrong question.

In my judgment, the important public policy question related to the coal resources in public ownership is "How can the government manage these resources to achieve the maximum benefits (savings) for the energy consumer?" This seems the appropriate objective at all times and it is obviously even more important with high energy prices a major contributor to a troublesome inflation.

I know that the provisions of the "Federal Coal Leasing Amendments Act of 1975" limit your ability to redirect the Department of the Interior effort. Nonetheless, I urge you to do what you can within the framework of existing law. I respectfully suggest that the Department develop appropriate amendments to the legislation so that these resources can be utilized to achieve the maximum benefit for the American consumer. We would be pleased to support such an effort with the Congress.

Sincerely yours,

Ken Holum

Ken Holum
 General Manager

Enclosure

H:kh

V-177

STATEMENT OF
KENNETH HOLLM, GENERAL MANAGER
WESTERN FUELS ASSOCIATION, INC.

BEFORE MEETING OF
DEPARTMENT OF THE INTERIOR
FAIR MARKET VALUE TASK FORCE FOR FEDERAL COAL MANAGEMENT

HOLIDAY INN (DOWNTOWN)
DENVER, COLORADO

NOVEMBER 1, 1979

Western Fuels Association, Inc., is a non-profit Wyoming corporation organized and existing for the purpose of securing fuel supplies for rural electric cooperatives and municipal electric utilities. We also arrange for the delivery of those fuels to the members' point of use.

Western Fuels Association exists for the purpose of keeping energy costs as low as possible for the ultimate consumer — "the little man at the end of the line." We consider this a meritorious objective — at all times — and even more meritorious at a time when inflation and high energy costs are adversely affecting so many consumers.

Our 24 members reach from the Pacific to the Mississippi and beyond and form a continuous span for Canada to the Gulf of Mexico.

Without indulging in the complications that seem to bedevil economists and keep them occupied, and realizing that your time constraints impose inhibitions on me, I would like to offer a few comments as spokesman for an organization that cares deeply about consumers. I appreciate the opportunity to do so.

(1) The people will be better served if the resources they own are used to keep energy costs low rather than to maximize the return to the Federal Treasury.

(2) The dominant position of the Federal Government in western coal means that the Federal Government determines royalty rates not just for the Federal Government but for state-owned and privately owned resources as well. The Department of the Interior itself recognized this fact when it abandoned plans to seek royalties in excess of 12.5 percent.

(3) Establishing royalty rates on coal owned by the people at levels designed to protect private investors in another area of the country rather than to keep energy costs low for consumers means that the government is.

- 2 -

placing the welfare of these entrepreneurs above the interests of the consuming public.

(4) The 8-percent royalty rate for deep mined coal and the 12 $\frac{1}{2}$ -percent royalty rate for strippable coal exceeds the royalty rates under which midwestern and eastern coal is available in the present market.

(5) Properly managed, the publicly owned coal resources can provide a strong lever to help keep the costs of all types of energy at reasonable levels for consumers in 49 of the 50 states. Why not use this immense resource as a yardstick so that the people and the public officials can judge the performance of the energy industry?

(6) Finally, and I realize that this suggestion may be outside of this group's assignment, I urge the Department of the Interior and other involved state and federal agencies to expedite their review and permitting process so that the consumer is not forced to bear increased costs as a result of delays caused by government agencies. If this requires additional personnel and appropriations, the Congress should be asked to provide them.

In conclusion, Western Fuels Association does not consider difficult the choices facing the Department of the Interior. The Department's overriding obligation is, and should be, to the American people who own the resource. They urgently need assistance from all of the forces that drive energy costs through the roof. Providing that assistance now is your challenge and your opportunity. You should discharge that responsibility by aggressive action designed to get the economic benefits from these publicly owned resources to "the little man at the end of the line" — the ultimate consumer.

You can help accomplish that objective by recommending and supporting royalty rates on publicly owned coal resources at the lowest levels permitted by law. Beyond that, the Executive Branch could serve the public interest well by recommending to the Congress that they reconsider and lower the royalty rates established in the Federal Coal Leasing Amendments Act of 1975.



Lower Colorado River Authority

Post Office Box 220 Austin, Texas 78767 AC 512 474-5931

R. M. TINSTMAN, Assistant General Manager

November 12, 1979

Mr. Charles Towle
c/o Office of Policy Analysis
U. S. Department of Interior
Main Building
Washington, D.C. 20240

Dear Charles:

Thank you for the opportunity to be present at the meeting in Denver on November 1, and to share the following with you and the other members of the Task Force on the Bidding Policies and Procedures for Federal Coal Leases.

Permit me to first and briefly identify the Lower Colorado River Authority (LCRA). It is an agency of the State of Texas and as such is non-profit and tax-exempt. Our unusual situation was recognized by being designated as one of the hardship situations in the compromise settlement of NRDC vs. Hughes. The following is expressed in an effort to be constructive and helpful to your Task Force and the Department of Interior.

Replacement Fuel. - During the public discussion in Denver on November 1, one consultant discussed at length and challenged the projections as to electric energy consumption. The need for replacement fuel in lieu of natural gas and oil must not be overlooked by our federal government. This switch to alternate fuels is both national policy and in some cases mandated to electric utilities. A considerable portion of the coal supplies needed in our country will be not just for growth reasons, but for replacement reasons.

Effect of Supply on Market. - From the point of view of a coal/lignite user, the federal role in the coal market is so significant that federal controlled or restricted supply of coal will distort without question the "fair market value". Thus the federal government could be clearly in the posture of actually making or setting fair market value as distinguished from determining what is fair market value within a normal market place. In this connection, this should be cause for encouraging your stated

Mr. Chaires Towle
November 12, 1979
Page 2

policy that the availability of coal or lignite be on the plus or high side in an effort to not drive the market up, and thereby cost the consuming public more.

Effect of Royalty Rates. - High government royalty rates would, without question, have an inflationary effect on royalties paid private property owners and thereby contribute to accelerating inflation throughout the nation. In addition, high government royalty rates (or bids), would tend to encourage inefficient mining by reason of the mine operator tending to not mine coal or lignite which has a higher unit cost.

Compliance with Congressional Action. - Determination by DOI of what is fair market value in reviewing bids needs to be distinguished from not making or setting fair market value by federal government control of production or use of royalty bonus terms. Royalties paid the federal government by successful bidders should not be used to:

- (1) control supply; -
- (2) establish "market"; - and
- (3) establish value (fair market value).

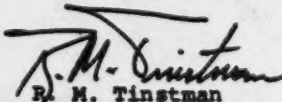
* * *

While the above statements may not be new, please accept them as intended to give emphasis and thereby be constructive. You and your associates are to be assured of the awareness of many of us of your conscientious diligence in treating this matter.

In closing, permit me to observe that the particular theory (discounted cash flow or otherwise) and related considerations discussed at length on November 1, seem secondary or certainly of lower priority than the above described considerations.

Thank you for your willingness to share this with others involved in this review.

Sincerely yours,



R. M. Tinstman
Assistant General Manager

T/b
Cc: Charles Herring, General Manager

NRECA NATIONAL RURAL ELECTRIC COOPERATIVE ASSOCIATION
 1800 Massachusetts Avenue, N.W.
 Washington, D.C. 20036/202-857-8500

November 15, 1979

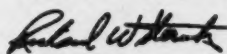
Mr. Charles Towle
 Department of the Interior
 Room 4142
 18th & C Streets, NW
 Washington, D.C. 20240

Dear Mr. Towle:

Attached are the comments from the National Rural
 Electric Cooperative Association's Federal Coal Land
 Leasing Committee on the Fair Market Value Study.

Your consideration of these comments will be
 appreciated.

Respectfully submitted,



Richard W. Sternberg
 Staff Liaison to the
 Federal Coal Land Leasing
 Committee

Statement of NRECA
on
Fair Market Value

To accomplish the President's oil reduction program other sources of fuel must be found. The use of solar and synfuels is in the future. We must have a fuel supply now. This is why the leasing of federal coal is so important.

The Council on Wage and Price Stability in mid-October said "that unless the federal government improves its methods for pinpointing leasing targets, there is a risk that consumer prices for coal will rise unnecessarily."

The August, 1979 issue of "The Petroleum Situation", published by The Chase Manhattan Bank, also gives some insight into the reason why the use of coal has not increased as predicted and why it is expected to double by 1990. The article on the "United States Coal Outlook" states, "that environmental and safety legislation, while necessary in concept, have significantly increased the cost of mining, transporting, storing and using coal, thus offsetting much of the comparative cost advantage to coal from rising OPEC oil prices. In addition, coal was put at a further disadvantage by the fact that the federal government kept oil and natural gas prices below the market level. Other factors adversely affecting coal costs have been higher wages, royalties and severance taxes, as well as increased costs of equipment, supplies and transportation."

"The net effect of these conditions is illustrated in the following tables:"

Relative Fossil Fuel Costs
For Large Industrial Users

	1978 Relative Costs	Fuel Component	Non-fuel Component
Coal	100	47%	53%
Low-Sulfur			
Fuel Oil	81	77%	23%
Natural Gas	70	86%	14%

"Shown is a comparison of the relative costs of the three fossil fuel alternatives available to a large industrial user. The annual costs of low sulfur fuel oil and natural gas have been indexed to the relative annual costs of the coal option; that is coal equals 100. In addition, the percentage distribution of fuel costs and non-fuel costs to the total cost of each alternative is indicated. The fuel oil cost component includes recognition of wellhead price controls on domestic crude. As the table indicates in 1978, coal was at a substantial economic disadvantage relative to oil and natural gas. When all user costs are taken into account, oil was 19 percent cheaper than coal while natural gas held a 30 percent advantage for large applications. As shown in the table, coal's inherent fuel cost competitiveness was far more than offset by its substantial non-fuel charges, that reflect in large measure the cost of complying with government regulations."

Changes that are expected to lead to a doubling of coal demand by 1990 are the deregulation of domestic crude oil prices, the Natural Gas Policy Act of 1978, and the Environmental Protection Agency's announcement of new source performance standards that have taken a moderate stand on sulfur dioxide emissions from new power plants.

We generally agree with many of the recommendations made in DOI's draft April 1979 report on "Fair Market Value of Federal Coal: Concepts and Procedures." However, we disagree with the discounted cash flow (DCF) method of determining fair market value (FMV). There are too many assumptions made when using the DCF method of determining the FMV (e.g. transportation costs, environmental costs). If competitive bidding was used, the tracts desired by a utility would be bid on, therefore setting the FMV. Also, if only one utility was interested in a particular tract, they should not be excluded.

The government should not be interested in obtaining the greatest return for a lease, but just so it doesn't lose money. This will help insure that the consumers do not have their rates increased.

We support the practice of increased royalties be dropped and that lease sales under the Federal Management program be offered with minimum statutory royalty rates. However, we disagree that regulatory royalty rates should be continued for underground coal. It was not Congressional intent to have royalty rates for underground coal.

We disagree that the consideration of non-market factors be dropped. Factors that should be considered among others are the oil import reduction program and the inflation.

We agree that there should be adequate public comment participation on the FMV, but there should be a restriction on the time period so there will not be a delay on the leasing of coal.

We agree that a documented appraisal be prepared but it should be issued before the lease is issued-not after.



UNITED STATES
DEPARTMENT OF THE INTERIOR
OFFICE OF THE SOLICITOR
WASHINGTON, D.C. 20240

NOV 21 1979

Memorandum

To: Director, Office of Coal Leasing, Planning
and Coordination

From: Assistant Solicitor, Onshore Minerals
Division of Energy and Resources

Subject: "Fair market value" in federal coal leasing

Summary

The Mineral Leasing Act, as amended in 1976, provides that federal coal leases shall not be issued for less than "fair market value." The statute does not define this phrase, nor does the legislative history. Departmental policy does suggest that fair market value be determined by reference to comparable sales whenever possible. An income method of appraisal is appropriate only when comparable sales appraisal is not available.

Discussion

Prior to the amendment of the Mineral Leasing Act in 1976, by Pub. L. No. 94-377, 30 U.S.C. §§ 201 *et seq.* (1976), there was no statutory requirement regarding minimum value to be received for leases of federal coal. The policy of the Department of the Interior was to require a relatively small bonus bid of \$1.00 to \$10.00 per acre and production royalty payments on a fixed cents-per-ton basis. Congressional displeasure with this long-standing practice, and the absence of competitive bidding in most sales, led to the imposition of new standards in 1976. Federal Coal Leasing, Hearing on H.R. 3265 Before the Subcomm. on Mines and Mining of the Comm. on Interior and Insular Affairs, 94th Cong., 1st Sess. 37-39 (1975).

As amended, the Mineral Leasing Act authorizes the Secretary to offer lands for leasing and to award leases by competitive bidding. However, "no bid shall be accepted which is less than the fair market value, as determined by the Secretary, of the coal subject to the lease." 30 U.S.C. § 201(a)(1) (1976). In addition, the Act prescribes a minimum royalty of 12 1/2 percent of the value of the coal (with lower rates if justified for coal produced by underground methods). 30 U.S.C. § 207(a) (1976).

-2-

The statute, unfortunately, does not define "fair market value," nor does the legislative history define the phrase. Where the relevant section of the bill was discussed, the language was merely repeated verbatim or equally opaque language substituted. S. Rep. No. 296, 94th Cong., 1st Sess. 13 (1975) (fair market value); H.R. Rep. No. 681, 94th Cong., 1st Sess. 18 (1975) (fair return). The legislative history does suggest that Congress believed that the requirements imposed by the amendments would be effective in guaranteeing receipt of fair market value.

The Committee feels strongly that the Federal Government should receive fair market value for public resources being used by private parties. Awarding leases by competitive bidding should help assure that this goal is achieved. The changes in the rental and royalty rates . . . will be another significant step toward fair return.

S. Rep. No. 296, supra at 13. The House Report listed five factors which would ensure a fair return to the public: competitive bidding, requirement of fair market value, increased royalty rates, readjustment of lease terms, and abolition of preference right leases. H.R. Rep. No. 681, 94th Cong., 1st Sess. 18 (1975).

Two other Federal statutes impose fair market value requirements on the disposition of Federal lands or minerals. Federal Land Policy and Management Act, Pub. L. No. 94-579, §§ 203(d), 209(b)(2), 43 U.S.C. §§ 1713(d), 1719(b)(2) (1976); Outer Continental Shelf Lands Act, as amended by Pub. L. No. 95-372, §§ 201(c), 208 (amending § 18), 208 (amending § 27) (1978) (to be codified at 43 U.S.C. §§ 1331(c), 1344(a)(4), 1353(a)). Fair market value is not defined in FLPMA or its legislative history. The OCS Lands Act provides a detailed definition; but only with regard to the purchase or sale of natural gas or oil by the United States. 43 U.S.C. §§ 1331(c), 1353; H.R. Rep. No. 1474, 95th Cong., 2d Sess. 79 (1978). The requirement that the OCS leasing activities be conducted to assure receipt of fair market value is therefore no better defined than the provision of the Coal Leasing Act.

The Department of the Interior Manual, however, does impose some constraints on the determination of fair market value. Appraisal standards for the acquisition and disposal of real property are identical. Departmental Manual § 602.1.3. In a succeeding section, the phrase "leases, sales or other dispositions" appears, indicating that a lease is a disposition falling within the scope of the appraisal standards. Departmental Manual § 602.3.1. The guide for appraisals by all Interior Bureaus and Offices is Uniform Appraisal Standards for Federal Land Acquisitions [UAS], published by the Interagency Land Acquisition Conference Committee, 1973. Departmental Manual § 602.1.3.

The UAS guide strongly recommends use of the comparable sales method of appraisal to determine fair market value.

In the absence of prior sales of the land taken [in a condemnation action], arm's-length transactions in lands in the vicinity of those taken at about the time of taking are the best evidence of market value. ^{1/} Too often it has been found in appraisal reports and appraisal testimony that the comparable sales approach has been relegated to a position as simply one of various approaches to value, with more time and attention being given to other generally less reliable approaches to value.

* * * * *

When there are adequate sales, however, there is little reason to dwell on other approaches to value to any great extent. As stated by the Supreme Court of the United States, "Where private property is taken for public use, and there is a market price prevailing at the time and place of the taking, that price is just compensation." ^{2/} The comparable sales approach normally should be stressed and care should be taken that it does not get lost among other evidence concerning less reliable approaches to value. Since it is the only approach to value that reflects the balance of supply and demand in actual trading in the market place, it usually develops the most acceptable and convincing evidence of the fair market value of the property.

^{1/} E.g., Baetjer v. United States, 143 F.2d 391, 397 (C.A. 1, 1944), cert. den. 328 U.S. 772; Welch v. Tennessee Valley Authority, 108 F.2d 95, 101 (C.A. 6, 1939), cert. den. 309 U.S. 688.

^{2/} United States v. New River Collieries, 262 U.S. 341, 344 (1923).

UAS, supra, at 9 (footnotes renumbered). With regard to a discounted cash flow or income method or appraisal, the UAS guide observes:

There are, of course, some income producing, investment-type properties where the "income" (now frequently referred to as the "earnings") approach

-4-

is particularly relevant. However, even when valuing that type of property, where there are a reasonable number of sales demonstrating what buyers and sellers are actually paying in the market for comparable properties, reliance upon a valuation approach other than the comparable sales approach should be given careful consideration.

The above cautionary note is warranted. Initially, use of the income approach frequently consumes a disproportionate amount of time, and, as a result, it received unmerited emphasis to the detriment of the sales evidence which demonstrates what buyers and sellers are paying on the market for comparable income producing properties.

Id. at 13-14.

Conclusions

The Department is not required by law to use only the comparable sales approach to determine fair market value. Assuming that leases are a form of disposal, however, Departmental policy does require that alternative methods be adopted only when the comparable sales method is shown to be inadequate. As the UAS guidebook suggests, the income approach is not preferred, if comparable sales data are available. Any program policy that avoids the use of comparable sales data must either: 1) document the absence of such data; 2) document why such data, if they exist, are not truly comparable, for example, why private sales data cannot be applied to federal coal; or 3) include a conscious determination to alter the Departmental Manual's applicability to coal leasing.

/s/

Lawrence G. McBride

V-189



United States Department of the Interior

OFFICE OF THE SECRETARY
WASHINGTON, D.C. 20240

Memorandum

TO: Chief, Branch of Economic Evaluation, USGS
Assistant to the Director for Coal Management, BLM

FROM: Chairman, FMV Oversight Group *Chuck Decker*

SUBJECT: Under Secretary's Decision on "High Rent" "Small" Tracts

On December 1, 1980, the Under Secretary concurred in a proposal from the Oversight Group on a method of apportioning rents on various categories of "small" "high rent" tracts, as defined in the Secretarial Issue Document (SID) on Fair Market Value and Minimum Acceptable Bids for Federal Coal Leases. A copy of the signed memorandum is attached. I believe the proposal deals equitably with the questions raised by the sale of small, uneconomic Federal coal lease tracts that cannot attract any significant degree of bidder competition.

With this concurrence, GS can now take the appropriate steps to make a determination on the West Decker tract, using the approved guidelines to calculate which policy option would apply in setting the MAB for lease sale. Following the GS determination, I assume that BLM will proceed to lease sale as expeditiously as possible, given the length of time this action has been pending. If I can assist in any way, please let me know.

I hope that, because of the resolution of this major issue, all future pre-sale evaluations involving "small" tracts will prove easier and more administratively efficient with this policy in effect.

Attachment



United States Department of the Interior

OFFICE OF THE SECRETARY
WASHINGTON, D.C. 20240

MAY 25 1980

Memorandum

TO: Under Secretary

THROUGH: Assistant Secretary - Land and Water Resources

FROM: Chairman, FMV Oversight Group

SUBJECT: Proposals for Minimum Acceptable Bids for "High Rent"
"Small" Tracts

The Secretary's May 28, 1980, decision on fair market value (FMV) and minimum acceptable bids (MAB) for Federal coal leases committed the Oversight Group to studying "small" tract screening methods to determine the existence and amount of rents that could be captured during a lease sale. This issue has enjoyed wide-ranging discussion within the Oversight Group over the past 4 months, and has been analyzed in the context of a pending lease sale involving a "small" tract with demonstrably greater value than Departmental minimum prices for coal leases.

Recommendation

"Small" tracts have been defined in the Fair Market Value Task Force Report and SID as those that do not comprise efficient mining units in and of themselves. In the context of Federal coal leasing, the two major types of potentially higher-than-minimum value "small" tracts are those needed for production maintenance at an existing mine and those tracts that would be bypassed and not mined as part of ongoing operations. For purposes of making minimum acceptable bid (MAB) determinations on "high rent" tracts, however, a more logical distinction would divide all "small" tracts into one of the two classes set out below, each class having its own specific approach for setting a MAB* for lease sale.

1. Type 1 bypass tracts: Where the Geological Survey (GS) can make a determination that the applicant or potential bidder can continue an ongoing operation by mining around the proposed lease tract with little or no economic sacrifice, the Department should recognize the

* It should be noted that the overwhelming majority of these sales will not produce significant competition for the tracts; hence, the MAB would almost certainly represent the eventual winning bid.

reality of this type of bypass situation by foregoing its (potentially significant) normal share of the excess profits accrued from mining the tract.

Under this category of tracts, the following approach to setting a MAB level appears to be pragmatic and equitable:

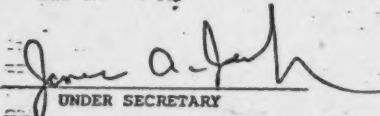
- o To determine that this type of bypass tract is the case, the applicant's surrounding holdings in the mining unit must be found to be leased at lower royalties than the Department's minimum levels of 8 or 12 1/2 percent for underground or surface mines. This finding shall be made even though an evaluation of the tract might show the tract's overall value to the mining unit is greater than the government's minimum lease terms.
- o When the above case applies, we recommend MAB be set at a minimum rate of \$25/acre and 8 or 12 1/2 percent royalty, regardless of the apparent value of the tract. No evaluation would be conducted for type 1 bypass tracts.

The rationale for setting this MAB level regardless of the isolated tract's worth is that the company applying for the lease cannot be forced to charge its customer, usually a utility under long-term contract, more for the bypass coal than the coal on surrounding lands already under its control at substantially cheaper costs. But this is just what the Department would be attempting if the MAB were set to capture more than minimum rates from the tract. Under the typical existing coal sales contract, the utility would likely not exercise its option for the more expensive Federal coal as long as it knows the mine has cheaper coal available. Thus, the mine owner will refuse to bid on the tract or, having bid, refuse to mine it and the coal on the tract would be bypassed. The probable economic loss to the government stemming from the applicant's greater likelihood of refusal to bid or mine these tracts would exceed the potential loss of revenue engendered by setting the MAB at \$25/acre with an 8 or 12 1/2 percent royalty. The MAB would, therefore, reflect the expected true value of the tract in the market. Even in sacrificing what may be a much higher bonus for a few tracts, the Federal Government still retains a favorably high royalty structure. Overall this procedure greatly diminishes the chance that the coal could be irretrievably lost from production.

2. "Split rent" determination: For all other "high rent" bypass tracts and for "high rent" production maintenance tracts the probable single bidder on the tract is either economically motivated to mine the bypass or cannot continue an ongoing operation unless he obtains a lease on the tract. Here we recommend a simple 50-50 split of the rents, recognizing the advantages both to the lessee and the Department that the tract be leased. Rents would still be evaluated under the conservative assumptions used for large tract evaluations,

except that company-supplied data on coal sale contract terms on surrounding leases or fee lands would be utilized by the GS in the discounted cash flow analysis leading to rent determination. In arriving at this recommendation, the Oversight Group assumed that the result of a fair bargaining session between equally matched parties, such as this category of tract offerings represents, would very nearly be an even division of the rents.

With regard to recommendations above, I concur:

 Date: 12/1/80

UNDER SECRETARY

COMPTROLLER GENERAL'S
REPORT TO THE CONGRESS

A SHORTFALL IN LEASING
COAL FROM FEDERAL LANDS:
WHAT EFFECT ON NATIONAL
ENERGY GOALS?

D I G E S T

Serious problems are indicated in the Department of the Interior's first attempt to implement its new Federal coal leasing program through the January 1981 lease sale in the Green River-Hams Fork region of Colorado and Wyoming. The problems involve

- not leasing enough coal,
- not selecting the best coal areas for lease, and
- not having needed coal data.

Unless these problems are corrected early, Federal lands may not contribute significantly (as they could) to meeting the Nation's need for more coal in the years ahead.

Resumption by Interior of the coal leasing program--after almost 10 years of inactivity--comes at a crucial time. Coal--which this Nation has in abundance--is expected to be relied on increasingly throughout the remainder of this century as the one major energy supply source which can help bridge the gap between our overdependence on imported oil and gas and our ultimate reliance on inexhaustible resources. And because much of the Nation's most accessible and economically mineable coal lies on Federal or interspersed non-Federal lands in the West, Federal leasing policies hold an important key to whether this gap can and will be filled.

Tear Sheet. Upon removal, the report cover date should be noted hereon.

EMD-80-87

INADEQUATE LEASING TARGETS COULD LEAD
TO SHORTFALLS IN COAL PRODUCTION

Interior establishes coal leasing targets by considering the difference between its mine production estimates and the Energy Department's demand estimates to determine the amount of coal production that must be generated from new Federal leasing. Factors such as mine life, Federal/non-Federal coal ownership ratio, coal recovery ratio, and level of uncertainty are all taken into consideration.

GAO found, however, that certain assumptions being used by Interior in deriving its leasing targets are questionable and/or invalid. As a result--for the 1981 Green River-Hams Fork sale--at least three times more coal needs to be leased than is presently called for in the leasing target.

Limited tract delineation activity in Green River-Hams Fork will preclude Interior from making available at this late date sufficient amounts of additional coal to make up for the 1981 leasing shortfall. Thus, immediate action--including a possible 1982 follow-on lease sale--is necessary to assure that enough coal is made available to meet the region's projected coal demand.

In addition to shortfalls in the coming Green River-Hams Fork sale, if Interior does not revise its assumptions and improve the target-setting process, there is increased risk of not leasing sufficient coal in other future sales to satisfy national energy needs. (See p. 18.)

LATE EXPRESSIONS OF INDUSTRY
INTEREST AFFECT THE LEASING PROCESS

Exclusion of formal expressions of leasing interest during land use planning may unnecessarily restrict coal development and force it to less economically and possibly even less environmentally suitable locations. (See p. 34.)

For the first lease sale, Interior selected two tract areas containing an estimated 180 million tons of coal for the land use planning effort. Those tracts, however, contain lower quality coal than the average for the region and their selections ignored two tract areas containing an estimated 800 million tons of higher quality coal. The selection of low-quality coal areas not only could result in leasing less economically suitable coal but, because of threshold development levels, also could limit the amount of higher quality coal that could be leased in the future. (See p. 35.)

Industry is currently interested in mining some areas--including areas for synfuel development--that may not be considered for leasing until 1987 or later. Industry interest is given a low priority in deciding what potential coal mining areas should be evaluated for leasing. The request for and use of industry input would give better focus on where land use planning should be done. (See p. 37.)

INSUFFICIENT DATA LIMITS COAL LEASING

The Geological Survey does not have sufficient information to identify and evaluate tracts to meet the Bureau of Land Management's planning schedules. (See p. 41.)

In the past the Survey has not been able to assess the need for drilling and other exploration work to support leasing actions. Now that a leasing program is in effect, it can better identify these needs and effectively plan for this work by developing long-range exploration plans, obtaining public input on target exploration areas, and assigning permanent team leaders for tract delineation. (See p. 42.)

The condensed time frame allowed the Survey by the Forest Service and the Bureau of Land Management for coal data acquisition may severely

restrict the number of tracts that could be delineated and considered for leasing between 1981 and 1985. Failure to allow adequate time for drilling to fill data gaps may also limit competition. For example, a tract for the 1981 proposed lease sale with a potential mining unit size of over 3,400 acres was restricted to about 400 acres because of lack of data. (See p. 45.)

In addition, lease tract evaluation procedures need to be improved. Criteria for computing reserve estimates are not consistently applied and procedures for evaluating reserves do not assure the consideration of all known conditions. Furthermore, review of reserve estimating procedures has been informal and weak, resulting in understatements of coal reserves on some tracts because some mineable coal is not considered and overstatements on other tracts because coal is projected to exist where it probably does not. (See p. 51.)

A substantial portion of pre-lease drilling is done by the Survey, even though the private sector could do more if encouraged. In evaluating the reserves on a potential exchange tract, the Survey was directed to do the drilling--at a cost of \$1.5 million--even though a utility offered to do it at its expense and make all the data public. (See p. 55.)

At present--because Interior has not decided on which tracts will be set aside for special leasing opportunities (e.g., for public bodies)--coal companies have no assurance when obtaining exploration licenses that they will actually be able to bid on any such explored areas eventually put up for lease. A decision by Interior, one way or the other, at the time licenses are granted would give industry added incentive to invest in exploration activity. (See p. 56.)

Coal exploration efforts by the Survey on certain Forest Service lands have been

frustrated because of a lack of guidance as to which agency establishes estimating standards. (See p. 47.)

RECOMMENDATIONS

Recommendations to the Secretaries of Energy and the Interior

Limited tract delineation efforts in Green River-Hams Fork will preclude Interior from making available at this late date sufficient quantities of additional coal to make up for the 1981 leasing shortfall. Therefore, the Secretary of the Interior should initiate immediate plans for a follow-on sale--possibly in 1982--to meet the region's projected coal demand. In re-calculating the regional leasing target, he should:

- Exclude production from the Cherokee mine.
- Allow for a more realistic lead time for leases to reach full production.
- Require estimates for coal recovery, mine life, and Federal coal ownership based on the most recent, site-specific analysis.
- Include a margin of error for the Geological Survey's coal reserve estimates.

Even more basically, however, Interior needs to improve its target-setting process related to other future lease sales. Because of its criticality, GAO recommends that the Departments of Energy and the Interior jointly review the assumptions used in establishing leasing targets, including the factors indicated above, to assure that sufficient coal will be leased to satisfy national energy goals, as well as to promote healthy competition. The review should be documented with a written report submitted to the respective Secretaries.

To insure that areas of high-quality coal are not ignored in future lease sales, the Secretary of the Interior should:

- Add a requirement that the Bureau of Land Management formally and periodically request, through the Federal Register, expressions of interest in possible lease tracts for all land use planning areas that contain Federal coal.
- Insure that land use planning for coal is not limited to so-called Known Recoverable Coal Resource Areas when development interest is indicated by industry and coal data is available elsewhere.
- Decide on whether, and if so how, threshold development levels will be used so that present uncertainty over how much leasing can actually occur in given areas is eliminated.

The new coal program requires substantial amounts of coal data for use in numerous analytical and decisionmaking steps. To meet this need, the Secretary of the Interior should require the Director of the Geological Survey to:

- Develop long-range plans, at the field level, for coal exploration activities in direct support of tract delineation, and obtain formal public input on potential exploration areas.
- Appoint permanent tract delineation team leaders for all coal regions where leasing is anticipated.
- Clarify procedures for making reserve estimates and establish formal procedures for quality controls in the reserve estimate computation process.

In addition, the Secretary of the Interior should require the Director of the Bureau of Land Management to coordinate with the Geological Survey before determining the time to be allotted for the Geological Survey's work in activity planning--allowing, if possible, at least one drilling season for the tract delineation process.

To promote drilling by the private sector, the Secretary of the Interior should:

- Develop explicit procedures under which land exchange applicants could drill candidate exchange tracts.
- Inform companies or others when they obtain an exploration license that they will or will not be allowed to bid on the tract if it is offered for lease.

Recommendation to the
Secretary of Agriculture

The Secretary of Agriculture should require that the Chief of the Forest Service

- Direct his staff to rely on the Geological Survey's standards for coal reserve estimates to be used for land use planning--as well as for tract delineation.
- Coordinate with the Geological Survey as early as possible concerning proposed sites for drilling so that the Geological Survey can plan drilling and other exploration activities needed to prepare for any future leasing--as well as for the preparation of land use plans.

AGENCY COMMENTS

Comments from the Departments of the Interior, Energy, and Agriculture are included as Appendixes I, II, and III to this report and analyzed in chapter 7.

Interior stated, "We find ourselves in agreement in whole or in part with all your recommendations," but raised a variety of issues and questions which are dealt with in detail in chapter 7. It plans to undertake a number of studies, including a look at its assumptions for developing leasing targets and ways to encourage more industry participation in the coal program. The studies should be useful but are not reasons for delaying certain actions.

The Department of Energy provided no substantive comments. Agriculture offered two comments concerning the role of the Forest Service in coal leasing, and GAO has made appropriate changes in the report to reflect its views.

COAL



AN ANALYSIS OF EXISTING FEDERAL COAL LEASES

Division of Minerals Management
Program Development and Analysis

U.S. DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

March, 1976

Table of Contents

	Page
Executive Summary	1
Introduction	3
I. Factors Leading to the Existing Situation	4
II. Quantitative Description of Leases	10
A. Analysis	10
B. Classification Categories	10
C. Currently Producing	11
D. Past Production with Plans for Future Production	13
E. No Past Production, Plans for Future Production	16
F. No Past Production and No Plans for Future Production	19
G. Past Production No Plans for Future Production	21
III. Summary of Lease Categories	23
Conclusion and Interpretation	33
Appendix A, Federal Coal Leaseholders	A-1
Appendix B, Status of Leases by State	B-1

List of Tables

Table	Page
A. Production of Western and U.S. Coal Reserves	7
B. Existing Federal Coal Leases	9
C. Leases Currently Producing	12
D. Leases With Past Production and Plans for Future Production	15
E. Leases With No Past Production but With Plans for Future Production	18
F. Leases With No Past Production and No Plans for Future Production	20
G. Leases With Past Production and No Plans for Future Production	22
H. Status of Leases by Lease Category	24
I. Leases by Lease Category as Percent of Total	25
J. Coal Reserves on Federal Leases	31

List of Figures

Figure	Page
#1 Comparison of Federal Coal Production with Acreage Under Federal Coal Lease	5
#2 Total Acreage and Private Surface in Each Lease Category	27
#3 Planned Coal Production from Federal Leases	29

AN ANALYSIS OF EXISTING FEDERAL COAL LEASES

Executive Summary

~~Coal constitutes 73 percent of the total known domestic fossil-fuel energy reserves in the United States.~~ Much of the Nation's western coal resource is in the six States of Colorado, Montana, New Mexico, North Dakota, Utah, and Wyoming. ~~The Federal Government owns~~ approximately 60 percent of the coal reserves in this area and influences up to 80 percent of the developments because of ownership patterns.

At present, ~~268 leases held~~ 467 Federal coal leases covering 682 thousand acres with an estimated 16.2 billion tons of recoverable reserves in the six State area. ~~Some 217 leases were obtained~~ through the preference right method and 250 through the competitive method. Thirty-eight percent of the lease acreage is in private surface ownership. ~~Two-thirds of the reserves can be recovered through surface mining.~~ ~~The average lease size is about 1,500 acres.~~ ~~Seventy-seven percent of the leases were issued within the past 10 years and 43 percent within the last ten years.~~

These leases were reviewed with respect to their past, present, and future production and development plans.

Sixty-five of the 467 leases produced over 23 million tons of coal in the past but have no plans for future production. Another 53 currently producing leases mined over 21.5 million tons of coal in 1974, with cumulative production of 129 million tons, and plan to more than double their annual output before 1980. Nearly all of these leases are over 10 years old and most are over 20 years old.

A major finding of the analysis is that ~~over 50 percent of the 467 leases, which are held by 66 lessees, cover 60 percent of the total lease acreage and contain 60 percent of the total coal reserves, have never produced and have not indicated any plans for development of production before 1990.~~ Nearly all of the leases that have no plans for production were issued within the last 20 years and over 60 percent within the past 10 years. The average age is 11 years. The leases average 200 to 300 acres larger than the average size for all leases and are two to four times larger than the average 30 year old leases. ~~Over 60 percent of the leases that have no plans for production were obtained through the preference-right method as opposed to the past and currently producing leases which were obtained primarily through competitive bidding. Most of the coal reserves of leases with no production plans are located in Wyoming and is surface-recoverable coal. However, over one half of the leases and 27 percent of the coal reserves in this category is located in Utah and is underground mineable.~~

Production Category	No. of Leases	No. of Lessees	Total Acreage 1000	Total Reserve, Million Tons	Average Age of Lease, Years	Average Size of Lease, Acres
Produced in past only	65	50	28	382	31	435
Producing in 1974	53	39	85	1,606	23	1,665
Produced in past and will in future	31	24	29	349	30	947
No past production but will in future	79	29	129	4,148	12	1,622
Never produced and no plans to	239	66	411	9,681	11	1,734
Total or Average	467	208	682	16,166	16	1,460

Introduction

~~Fossil fuels currently provide over 90 percent of the energy that Americans consume.~~ Of this energy consumption, ~~72 percent is provided by oil and gas,~~ while only ~~13 percent is from coal.~~ Yet coal constitutes ~~73 percent of the total domestic fossil-fuel energy bank,~~ while oil and ~~natural gas combined comprise only 10 percent.~~ ~~Oil in oil shale contains 17 percent of the Nation's energy reserve,~~ but technology for commercial scale recovery of this resource has not yet been developed. This along with the effort of achieving self-sufficiency in energy resources would indicate that coal, and particularly the vast, relatively low-sulfur western coal deposits, would assume an increasingly important role as domestic oil and gas reserves are further depleted and longer term solutions to our energy shortages are perfected.

~~Nation's oil nation's western coal resource is in the six States of Colorado, Montana, New Mexico, North Dakota, Utah, and Wyoming.~~

Development would principally be within these States. Although there are ~~31 leases in Oklahoma and coal reserves are small compared to the other six States and would require mostly underground mining,~~ thus, ~~extensive coal development would most likely occur in the other six States before it would in Oklahoma.~~ The Federal Government owns approximately 60 percent of the coal resources in the six-State area and influences upwards of 80 percent of the development because of ownership patterns.

At present there are 467 existing Federal coal leases in these six States. These leases total 681,812 acres and contain 16.2 billion tons of recoverable reserves. This report will give the existing situation for the 467 outstanding leases.

I. Factors Leading to the Existing Situation

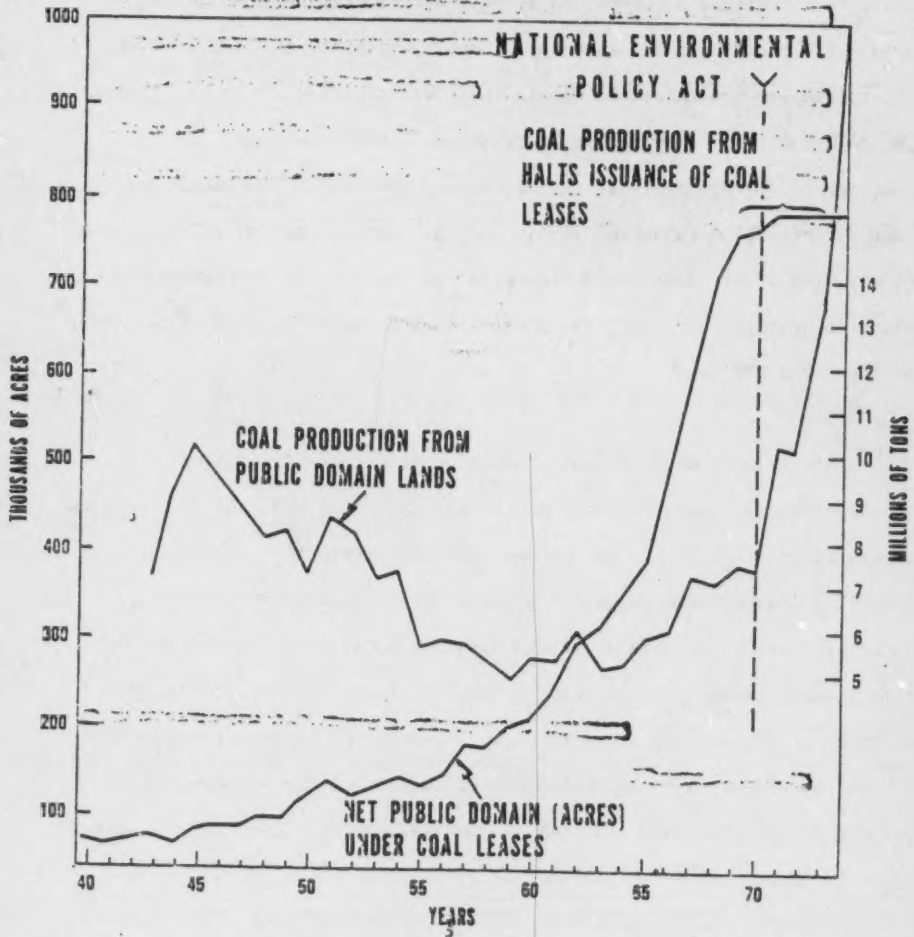
Historically, and until the late 1960's, the Department of the Interior traditionally played a reactive role in leasing federally owned coal, responding to industry applications for coal leases on a case-by-case basis. ~~Subsequent to a coal leases study,~~ the Department of the Interior ~~halted the issuance of coal leases and prospecting permits, to reassess coal leasing policies.~~ The study showed that the acreage of ~~coal under lease on public domain was skyrocketing while production from Federal leases was declining.~~ (Fig. 1). Acreage under lease had increased from about 80,000 acres in 1945 to about 778,000 acres in 1970. Production during this period had declined from about 10 million tons in 1945 to 7.4 million tons in 1970.

~~Ninety-one-and-one-half percent of the total acreage under coal lease was within non-producing leases.~~ It was also determined that in 1970 761,000 acres of public and acquired lands included within outstanding coal prospecting permits were held principally by coal brokers - not coal producers.

From May 1971 until February 1973, no additional coal leases were issued by the Bureau of Land Management. In February 1973, the Secretary of the Interior announced a new coal leasing policy, which included short-term leasing criteria designed to supply established operators with sufficient reserves to continue operations and supply existing markets. Since that time, eight coal leases have been issued under these criteria and several more are pending final approval.

1/ Holdings and Development of Federal Coal Leases, Bureau of Land Management, November 1970.

COMPARISON OF FEDERAL COAL PRODUCTION WITH ACREAGE UNDER FEDERAL COAL LEASE, 1940 - 1974



~~The production of western coal has begun to increase rapidly~~
~~particularly since 1970~~ This trend is reflected in Federal production
 statistics. Figure 1, shows the acres under Federal lease with annual
 production from Federal leaseholds. Note how rapidly ~~production from~~
~~Federal leases has increased within the last several years. During this~~
~~period the acreage under lease has remained almost constant.~~ The
 increase is due primarily to ~~(1) increasing demand for low-sulfur coal to~~
~~meet air pollution requirements, (2) increasing consumption of electrical~~
~~energy with a corresponding increase in the use of coal to fuel base load~~
~~electric generation plants, (3) a shift in the relative price of delivered~~
~~coal-derived BTU's.~~

The relative importance of coal production from federally leased
 vs. State and privately owned land in the six States had been
 declining until 1970. Table A shows that coal production from
 federally leased reserves was 30 percent of total western production
 in 1960. This percentage decreased steadily until 1972 when production
 from Federal leaseholds was only 20 percent of the western States' pro-
 duction. 1/ This trend is particularly significant considering that the
 Federal Government owns approximately 60 percent of the western coal
 resources. If ownership patterns are considered, the Federal Government
 controls or influences development of upwards of 80 percent of western
 coal resources. ~~Less than 5 percent of federally owned coal resources~~
~~have been leased.~~

1/ Most growth in recent years in western low-sulfur coal production
 has come from Indian land. Production from Indian land in 1960
 amounted to one percent of the total production. This has expanded
 to about 17 percent in 1972.

Table A. Production of Western and U.S. Coal Resources, 1960, 1965, 1971, 1972, 1973 and 1974

Sector	Actual					
	1960	1965	1971	1972	1973	1974
U.S. total, Million tons <u>a/</u>	415.5	512.1	552.2	595.4	591	590
Western States, Million tons <u>b/</u>	13.7	19.4	38.7	44.3	51.7	65.0
Percent	3%	3%	7%	7%	8%	11%
Federal Land, Million tons <u>c/</u>	4.2	4.9	9.1	8.8	12.9	21.53
Percent of Western States	30%	25%	23%	20%	25%	33%

- (a) Dupree, Walter G., and James A. West, U.S. Energy Through the Year 2000. U.S. Department of the Interior, Washington, D. C., December, 1972. Bituminous Coal Facts, 1972, National Coal Association, Washington, D. C., 1973 and BCM 1974.
- (b) The six western States included in this report, Wyoming, New Mexico, Utah, North Dakota, Montana, Colorado. Broderick, Grace N., Supply and Demand for Energy in the U.S. by States and Regions, 1960 and 1965, 1. Coal Bureau of Mines Information Circular 8401, 1969. U.S. Energy Fact Sheets By States and Regions, U.S. Department of the Interior, Washington, D. C., February, 1973. Tonnage based on Fiscal Year figures.
- (c) Public Land Statistics. Bureau of Land Management, U.S. Department of the Interior, Washington, D. C., 1960, 1965, 1971, 1972, and 1973. Tonnage based on Fiscal Year Figures 1974 data Geological Survey.

Table B provides background data on existing Federal leases. Presented is information on surface and subsurface ownership, number of leases, number of lessees, type of lease acquisition, age distribution of leases, and production. ~~It is interesting to note that 50 percent of existing leaseholds in all 15 States in Table B have been issued within the last 10 years. However, a minimum of 5 years is normally required to bring a lease into production, so we cannot expect many of these leases to be currently producing.~~

TABLE B - EXISTING COAL LEASES

	Acreage		Private Surface	Leases		Preference Right	Type of Leases		Production (Tons) 1/		Less Than 5	Age, Years					Greater Than 40
	Total			Leases	Leases		Competitive	1974 to 1973	5-10	10-20		20-30	30-40				
Alabama	2,388.24		200.00	1	2	0	1	0	1,551,018	1	0	0	0	0	0	0	
Alaska	2,674.60		1,073.14	4	2	4	0	0	141,627 17,759,639	0	0	1	2	0	1	1	
California	80.00		0	1	1	1	0	0	1,257	0	0	0	0	1	0	0	
Colorado	121,470.83		54,606.51	113	38	56	57	2,312,121 39,379,466	1	41	40	9	10	12	12	12	
Kentucky	1,644.00		0	2	2	1	1	302,363	0	2	0	0	0	0	0	0	
Montana	36,232.27		34,967.19	17	12	3	14	4,486,412 24,974,424	1	6	6	1	1	2	2	2	
North Dakota	16,235.75		16,275.75	18	9	2	16	981,878 26,200,422	2	4	8	2	0	2	2	2	
Ohio	144.15		0	1	1	0	1	0 489,461	0	1	0	0	0	0	0	0	
Oklahoma	87,013.56		85,692.34	53	10	39	14	227,482 6,622,041	0	11	32	10	0	0	0	0	
Oregon	5,403.18		241.00	3	2	3	0	203 19,218	0	0	3	0	0	0	0	0	
Pennsylvania	80.29		0	2	1	0	2	0 0	2	0	0	0	0	0	0	0	
Utah	268,555.39		13,335.00	199	41	104	95	3,152,353 94,684,674	5	90	55	18	17	13	13	13	
Washington	521.00		521.09	2	1	1	1	139,246 1,053,337	1	0	1	0	0	0	0	0	
Wyoming	199,944.56		117,219.84	92	29	34	58	9,539,571 75,008,824	7	34	38	4	3	6	6	6	
Total	781,763.66		350,329.64	536	167	266	276	22,336,500 291,642,608	23	193	197	47	37	39	39	39	

1/ Includes production from past leases which are no longer outstanding leases.

II. Quantitative Description of Leases

A) Analysis

The analysis consist of presenting the current situation of outstanding Federal coal leases for the six western coal States of Colorado, Montana, New Mexico, North Dakota, Utah and Wyoming. The past, the present and the indicated future performance of these leases are shown. Acreage, ownership, lease type, age and past production obtained from BLM records, and reserves, and past, present and future production obtained from Geological Survey by lessee questionnaires make up the base data for the analysis.

B) Classification Categories

The leases are classified on their past, present and future performance with respect to production. ~~The leases are in five classes: currently producing (CP), leases with past production and plans for future (PP, FP), leases with past production, but with no plans for future (PF), leases with no past production, but plans for future production (FP), and those leases with no past production and no indicated plans for the future (NP).~~

The classification of leases according to their future production plans is based upon leaseholders' voluntary response to a questionnaire. Therefore, we caution the reader that the indicated production plans for a lease may be a tenuous classification. For example, those leases categorized as not having future plans, means only that the questionnaire respondent did not indicate any production plans. It is not certain that the leaseholder does not have any production plans, it only means that he did not reveal any plans. Nevertheless, all leaseholders who did not indicate their future production plans were identified as planning no production before 1990.

C) Currently Producing (CP)

Leases that are currently producing are those leases that had production in 1974. Table C, gives the current situation for those leases now producing for the six coal States. ~~In 1974 there were 53 leases producing 21.53 million tons of coal. This amounts to 11.40 percent of outstanding leases ranging from 2 percent of the leases in New Mexico and Utah to 35 percent of the leases in Montana.~~

Cumulative production from these currently producing leases is 70 percent of the past production of all Federal leases. Future indicated production for these leases shows an increasing rate with current production more than doubling by 1980. Production then levels off at two times the 1975 rate and decreases somewhat by 1990. Over all, production from these CP leases is a decreasing percentage of total production to 1990, dropping from 100 percent in 1974 to 38 percent of all Federal production by 1990.

Other aspects of those leases currently producing are quite interesting. The 53 leases are held by 39 lessees. ~~Over 95 percent of the producing leases were obtained by competitive methods.~~ Private surface ranges from 21 percent in Wyoming to 100 percent in North Dakota with an overall average of 46 percent for the 85,085.76 acres in producing leases. ~~Approximately 50 percent of the leases are mineable by surface and 50 percent by underground methods. Recoverable reserves associated with the mining method on the other hand, shows that 67 percent of the reserves are mineable by surface methods and 33 percent by underground.~~ Eighty-one percent of the leases are over 10 years old with 45 percent being over 20 years old.

TABLE C - LENSES CURRENTLY PRODUCING (CY)

State	No. Lenses	No. Type Lense in Comp.	Total Average	Private Surface, Acres	Mining Method, No. Lenses	1974 Production (Tons)	Accum. Production (Mill. Tons)	Planned Production (Mill. Tons)				Reserves (Mill. tons)	Less than 5	Age of Lenses, years				Greater Than 40	
								1975	1980	1985	1990			5-10	10-20	20-30	30-40		
Colorado	14	11	14,400.14	7,306.95	2	1,312,121	70.20	1.05	6.26	7.55	6.09	31.21	245.46	1	1	6	1	4	3
Montana	6	5	10,970.65	10,378.45	6	6,486,410	22.04	0.50	15.50	15.70	13.70	306.56	0	1	0	4	0	0	1
North Dakota	4	3	6,555.76	5,271.20	2	1,023,713	3.22	1/2	1/2	1/2	1/2	1/2	3 1/2	0	0	2	0	0	0
Utah	14	10	18,311.65	5,997.44	4	981,678	13.82	1/2	1/2	1/2	1/2	1/2	1/2	1	0	1	1	0	1
Wyoming	12	8	30,945.64	5,530.67	0	2,131,153	42.25	3.64	6.60	6.83	6.94	0	144.0	1	1	3	6	2	3
Total	53	35	85,005.76	29,331.80	27	21,335,519	138.70	7.95	23.21	25.76	19.67	543.10	178.30	1	3	5	1	0	3
								22.45	55.23	55.05	65.71	1030.44	507.96	5	5	19	7	4	11

1/2 Due to small number of lenses reserve and production figures deleted so as to not reveal possible proprietary information.

D. Past Production with Plans for Future Production (PP, FP)

Leases with past production and with plans for future production are those leases that have produced in the past and for some reason halted production prior to 1974. The lessees have indicated that the leases will produce in the future. Within this classification there are:

31 leases held by 24 lessees - Table D. Montana has no leases in this category. Twenty-four of the leases were obtained competitively.

Total acreage within this category is 29,359.95 acres, of which 34 percent is private surface. Average lease size ranges from 622 acres in Colorado to 2570.0 acres in New Mexico with a mean size for all leases of 947 acres. Private surface ranges from 80 acres per lease in Utah to 1,978.19 acres in New Mexico, the average being 326.45 acres per lease for all leases.

Total accumulative tonnage produced from these leases is 32 million tons from 1 surface mineable leases and 24 underground mineable leases. Recoverable reserves associated with the mining method are 260.39 million tons by underground methods and 88.26 million tons by surface methods. This averages 12.6 million tons per surface mine and 10.8 million tons per underground mine. Ranges are from 20.77 million tons per lease in North Dakota to 6.2 million tons per lease in Utah for surface and 5.75 million tons per lease in Colorado to 19 million tons per lease in Wyoming for underground mining.

Indicated future production from these leases will increase until 1985 and then drop to below the 1975 level by 1990. The number of

leases producing during this time span follows the same trend. 1975

~~21 of these leases will be producing 10.5 million tons, by 1980~~

~~28 leases will be producing 11.44 million tons, by 1985 29 leases~~

~~will be producing 14.59 million tons and by 1990 only 15 leases~~

~~will be producing 8.44 million tons.~~)

At present the age of these leases vary widely but the average is 21 plus years old. Thirty-two percent are over 40 years old and an additional 36 percent over 20 years old. Only three leases are less than 10 years old.

TABLE - D LEASES WITH PAST PRODUCTION AND PLANS FOR FUTURE PRODUCTION (PP, PF)

State	No. Leases	No. Type Lease	Total Acreage	Private Surface, Acres	Mining Method	Accum. Prod. (Mill. Tons)	Planned Production (Mill. Tons)				Reserves (Mill. Tons)	Less Than 5	Age of Leases Years					Greater Than 40			
							1975	1980	1985	1990			5-10	10-20	20-30	30-40					
Colorado	15	3	10	9,410.51	3,835.92	0	15	3.31	2.21	5.60	8.26	5.27	18.46	86.34	0	0	3	4	3	5	
Montana	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
New Mexico	1	1	0	1,570.13	1,978.19	1	0	0.71	1/	1/	1/	1/	1/	1/	0	0	1	0	0	0	
North Dakota	2	0	1	2,726.02	2,726.02	2	0	1.00	1/	1/	1/	1/	1/	1/	0	0	1	1	0	0	
Utah	10	6	1	9	12,221.75	800.00	2	8	24.08	1.38	4.49	5.28	2.10	6.20	155.35	0	2	0	2	3	3
Wyoming	3	2	0	1	2,431.34	480.00	2	1	1.88	1/	1/	1/	1/	1/	0	0	1	0	0	2	
Total	31	24	7	24	29,399.95	10,078.13	7	24	32.00	10.51	11.44	14.59	8.44	88.26	260.39	0	3	6	6	10	

1/ Due to small number of leases reserve and production figures deleted so as to not reveal possible proprietary information.

E. ~~No Past Production, Plans For Future Production (FP)~~

Leases with no past production but with plans for future production are those outstanding leases which have had no production since becoming a lease, but the lessees have indicated plans for producing in the near future. ~~Within this classification there are 79 leases held by 29 lessees.~~ Montana and North Dakota have no leases in this category. ~~Of the leases held, 43 were obtained competitively and 36 were obtained by preference right methods. Table E.~~

~~Total acreage within this category is 128,112.64 acres. Average lease size for this category is 1,621.67 acres.~~ This ranges, on the average of 1212.04 acres per lease in Colorado to 4,692.07 acres per lease in Wyoming. On the average a lease has 755.27 acres of private surface. Private surface ranges from no private surface in Utah to 2883.34 acres per lease or 61 percent of total acres under lease in Wyoming. ~~Of these outstanding leases, 18 are considered mineable by surface mining methods and 61 by underground methods.~~ Similarly the ~~recoverable reserves associated with these mining methods are 3,033.17 million tons by surface methods and 1,114.49 million tons by underground methods.~~ This yields an average of 168.50 million tons per surface mine and 18.27 million tons per underground mine. Ranges are from 19.65 million tons per lease in Utah to 535.49 million tons per lease in Wyoming for surface mineable reserves and 16.66 million tons per lease in Colorado to 34.15 million tons per lease in Wyoming for underground reserves.

Indicated future production from these leases shows a dramatic increase. ~~Production is indicated to increase almost 10-fold by 1980 from 6.17 million tons in 1975 to 59.06 million tons by 1980. The largest increase is in Wyoming which jumps from 1.03 million tons by 1975 to 39.21 million tons by 1980. A much smaller increase is seen overall between 1980 and 1985 when production increases to 75.48 million tons. From 1985 there is a decrease to 64.9 million tons by 1990. The decrease is caused primarily by no production in New Mexico and a 5.9 million ton decrease in production in Colorado by 1990.~~ This same trend is seen in the number of leases anticipating producing at these times; ~~41 leases producing by 1975, 76 leases producing by 1980, 77 leases producing by 1985 and only 58 leases producing by 1990.~~

Ninety-seven percent of these leases are less than 20 years old. Only 2 leases are younger than 5 years old, 33 leases are 5-10 years old and 42 leases are 10-20 years old, 2 leases are over 20 years old. In all, it can be seen that these leases are relatively young.

TABLE 2 - LEASES WITH NO FAST PRODUCTION BUT WITH PLANS FOR FUTURE PRODUCTION (FF)

State	No. Leases	Mo. Leases	Type Lease	Total Acreage	Private Surface, Acres	Mining Method	Planned Production (Mill. Tons)				Reserves (Mill. Tons)	Less Than 5	Age of Lease Years					Greater Than 40		
							1975	1980	1985	1990			5	10-20	20-30	30-40				
Colorado	56	17	30	26	67,875.57	35,959.15	4	52	4.32	12.14	19.72	14.06	182.74	846.33	0	28	27	1	0	0
Montana	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
New Mexico	2	1	0	2	4,365.60	611.00	2	0	1/	1/	1/	1/	1/	1/	0	0	2	0	0	0
North Dakota	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Utah	13	6	0	13	18,334.75	0	7	6	0.77	6.96	9.66	8.13	137.60	145.70	1	1	10	1	0	0
Wyoming	8	5	6	2	37,536.62	23,046.77	5	3	1/	1/	1/	1/	1/	1/	1	4	3	0	0	0
Total	79	29	36	43	128,112.64	59,666.92	18	61	6.12	59.06	75.49	64.90	3,033.17	1,114.49	2	33	42	2	0	0

1/ Due to small number of leases reserve and production figures deleted so as to not reveal possible proprietary information.

F. No Past Production and No Plans For Future Production (NP)

Leases with no past production and with no plans for future production are those leases which have not produced in the past and have not indicated any plans for future production. Within this classification there are 239 leases owned by 66 lessees. Of these leases, 138 were obtained by the preference right method and 98 competitively - Table G. Total acreage within this category is 411,011.52 acres. This average 1,720 acres per lease ranging from an average of 964 acres per lease in North Dakota to 3,137.95 acres per lease in Montana. Private surface totals 149,447.15 acres averaging 630.57 acres per lease, ranging from 37 acres per lease in Utah to 3,039.80 acres per lease in Montana.

There are 85 leases mineable by surface mining methods and 152 mineable by underground methods. Reserves associated with those leases by mining methods are 6,485.50 million tons recoverable by surface and 3,195.78 million tons by underground methods. The reserves per surface mineable lease on the average is 76.30 million tons and by underground 21.02 million tons. The range of which for surface recoverable reserves is 7.08 million tons in Utah to 138.56 million tons in Wyoming and for underground recoverable reserves is from 11.77 million tons in New Mexico to 23.56 million tons in Utah.

The age of the leases in this category tend to be within their initial 20 year term. Only 2 percent are less than 5 years old. This is balanced by 2 percent over 20 years old. Of the 239 leases 138 are 5-10 years old and 84 are 10-20 years old.

TABLE F. LEASES WITH NO PAST PRODUCTION AND NO PLANS FOR FUTURE PRODUCTION (NP)

State	No. Leases	No. Type Leases P.R. Comp.	Total Acreage	Private Surface Acres	Mining Method		Reserves (Mill. tons)	Less Than 5	Age of Leases, years				Greater Than 40	
					S	U			5-10	10-20	20-30	30-40		
Colorado	17	6	15	2	27,809.77	7,145.77	3 14	30.75	174.28	0	12	5	0	0
Montana	8	6	1	7	25,103.62	24,318.45	8 0	873.13	0	0	6	2	0	0
New Mexico	13	6	9	4	28,149.33	18,905.53	8 5	191.99	55.88	0	5	8	0	0
North Dakota	8	6	2	6	7,711.95	7,711.95	9 0	113.15	0	0	4	4	0	0
Utah	131	21	93	38	194,190.45	4,812.80	20 111	141.65	2568.84	4	84	38	5	0
Wyoming	62	21	21	41	128,070.39	86,552.65	37 24	5126.83	396.78	5	27	28	2	0
Total	239	66	141	98	411,011.52	149,447.15	85 154	6485.50	3195.70	9	138	85	7	0

G. Past-Production No Plans For Future Production (PP)

There are 65 outstanding Federal coal leases in the six western coal States that have produced in the past prior to 1974. Table Q. These leases make up 13 percent of the outstanding leases in the six States. Ownership of these leases is by 50 lessees. Most leases 64 percent, were obtained through competitive bidding. Only in New Mexico are preference right leases greater in number than competitive leases.

Total acreage is relatively small for this classification being only 28,267.57 acres or 4.1 percent of all leased acreage in these western States. Approximately 10 percent of this total acreage is private surface. Eighty-three percent of the leases were mined by underground methods. Only 11 leases were mined by surface mining methods. Cumulative production from these leases totals 23.36 million tons or 12 percent of past production from Federal leases. Nearly 96 percent of the recoverable reserves of these leases are mineable by underground methods. Only 15.80 million tons are recoverable by surface mining methods. The average recoverable reserves per lease ranges from 0.23 million tons in New Mexico to 11.14 million tons in Utah for underground mineable leases and 0.38 million tons in New Mexico to 2.27 million tons per lease in North Dakota for surface mineable leases. The average is 1.43 million tons per lease for surface mineable reserves and 6.80 ^{MILLION} tons per lease for underground mineable reserves.

The age of these leases as a whole are old. Eighty-nine percent are over 20 years old. Only 1 of these leases are under 10 years old. Twenty-five of the 65 leases are 30-40 years old, and 17 leases over 40 years old.

TABLE C - LEASES WITH PAST PRODUCTION AND NO PLANS FOR FUTURE PRODUCTION (P)

State	No. Leases	Mo. Type Lease Pr. Comp.	Acres	Private Surface Acres	Mining Method Mo. Leases S U	Accum. (Mill. Tons) Prod.	Reserves (Mill. Tons)		Age of Leases, years				Then Than 40				
							S	U	5	5-10	10-20	20-30		30-40			
Colorado	11	9	3	0	1,484.74	460.72	0	11	3.39	1.90	11.44	0	0	1	3	3	4
Montana	3	3	1	2	200.00	120.00	3	0	0.16	1/	1/	0	0	0	1	1	1
Utah	10	9	0	4	920.70	400.00	2	8	0.27	0.32	1.20	0	1	0	1	5	3
North Dakota	4	4	0	4	840.34	840.34	4	0	5.34	1/	1/	0	0	2	1	0	1
Utah	31	19	9	22	23,876.79	921.78	0	31	14.04	0	345.61	0	2	4	6	12	7
Wyoming	6	6	4	2	920.00	120.00	2	4	0.16	2.40	7.56	0	0	1	0	4	1
Total	65	50	23	42	28,242.57	2,863.54	11	54	23.36	15.80	366.60	0	3	8	12	25	17

1/ Due to small number of leases reserve figures deleted so as to not reveal possible proprietary information.

III. Summary of lease Categories

The existing Federal coal leases in the six Western States of Colorado, Montana, New Mexico, North Dakota, Utah and Wyoming are classified into five categories based upon the leases past, present and future development plans. The five categories are Currently Producing, (CP), Past Production No plans for Future Production, (PP), Past Production With Plans for Future Production (PP,FP), No Past Production but With Plans for Future Production (FP) and No Past Production with No Plans for Future Production (NP).

Tables H and I show some details of existing Federal coal leases by category.

~~There are 465 outstanding Federal coal leases within the six western States, of which 49 percent of the leases have produced or have indicated they will be producing in the near future and 51 percent which have not produced in the past and have not indicated any plans for future production.~~

~~The 465 leases are owned by a total of 128 individual lessees. Of the lessees, 40 of them hold only one lease each, leaving 88 lessees with 425 leases.~~

Thirty-nine percent have leases in the PP category. Nineteen percent have leases in the PP, FP category. Twenty three percent have leases in the FP category and 52 percent hold leases in the NP category. Appendix A, gives a list of the top 20 lease holders giving number of leases, lessee and total number of acres for all states and individual States.

1/ The 128 individual lessees is equivalent to the sum of 208 lessees in Table H because, an individual lessee may own a lease in more than one category, thus an individual lessee will be counted more than once as the categories are summed.

TABLE B - STATUS OF LEASES BY LEASE CATEGORY

Category	No. Lease	No. 1/ Leases	Type Lease	Total Acreage	Private Surface Acres	Mining Method	1976 Production (Mill. Tons)	Accum. Prod. (Mill. Tons)	Planned Production (Mill. Tons)				Reserve (Mill. Tons)	Less Than 5	Age of Lease, years				Greater Than 40	
									1975	1980	1985	1990			5-10	10-20	20-30	30-40		
PP	65	50	23	42	28,242.57	2,063.54	-	23.36	-	-	-	-	15.80	366.69	0	3	10	10	25	17
GP	53	39	9	44	85,085.76	39,233.49	21,325,559	128.70	27.45	35.23	55.05	45.71	2,030.44	567.96	5	5	19	6	7	11
PP,GP	31	24	7	26	29,359.95	10,120.13	-	32.33	10.51	11.44	14.59	8.44	80.26	260.39	0	3	6	6	6	10
FP	29	29	34	42	128,712.44	59,666.92	-	-	6.12	39.06	75.49	64.90	3,033.17	1,314.49	2	34	43	2	0	0
GP	230	66	242	90	411,031.52	169,447.15	-	-	-	-	-	-	6,485.50	3,195.75	7	139	84	7	0	0
Total	647	208	217	250	681,812.44	282,432.63	21,325,559	186.47	64.38	125.73	145.13	119.49	10,642.17	5,505.31	14	184	160	31	30	38

PP - Past production no plans for future production

GP - Currently Producing

PP,GP - Past production, plans for future production

FP - No past production but with plans for future production

GP - No past production and no plans for future production

1/ Overlap of Leases Between Categories

TABLE 1. LEASES BY LEASE CATEGORY AND FERTILITY OF TOTALS

Category	No. Lease	No. Lease	Type Lease P.A. Comp.	Total Acreage	Private Surface Acreage	Mining Method	1974 Production B B	Actual Prod.	Planned Production (Mill. Tons)			Reserves (Mill. Tons) B B	Less Than 5	Age of Lease Years					Greater Than 40		
									1975	1980	1985			5-10	10-20	20-30	30-40				
PP	16	28	11	16	4	1	17	13	-	-	-	1	7	0	2	6	32	66	45		
GP	72	10	6	10	22	15	6	100	19	42	44	38	10	10	26	3	12	19	10	29	
PP, GP	2	13	2	10	4	4	6	-	17	24	9	16	7	1	5	0	2	4	19	14	26
PP	17	14	14	18	19	18	19	-	-	24	47	52	55	38	30	14	18	26	6	0	0
GP	51	31	46	38	61	57	48	-	-	-	-	-	44	38	50	75	52	25	0	0	
Total	140	140	140	140	140	140	140	140	140	140	140	140	140	140	140	140	140	140	140	140	140

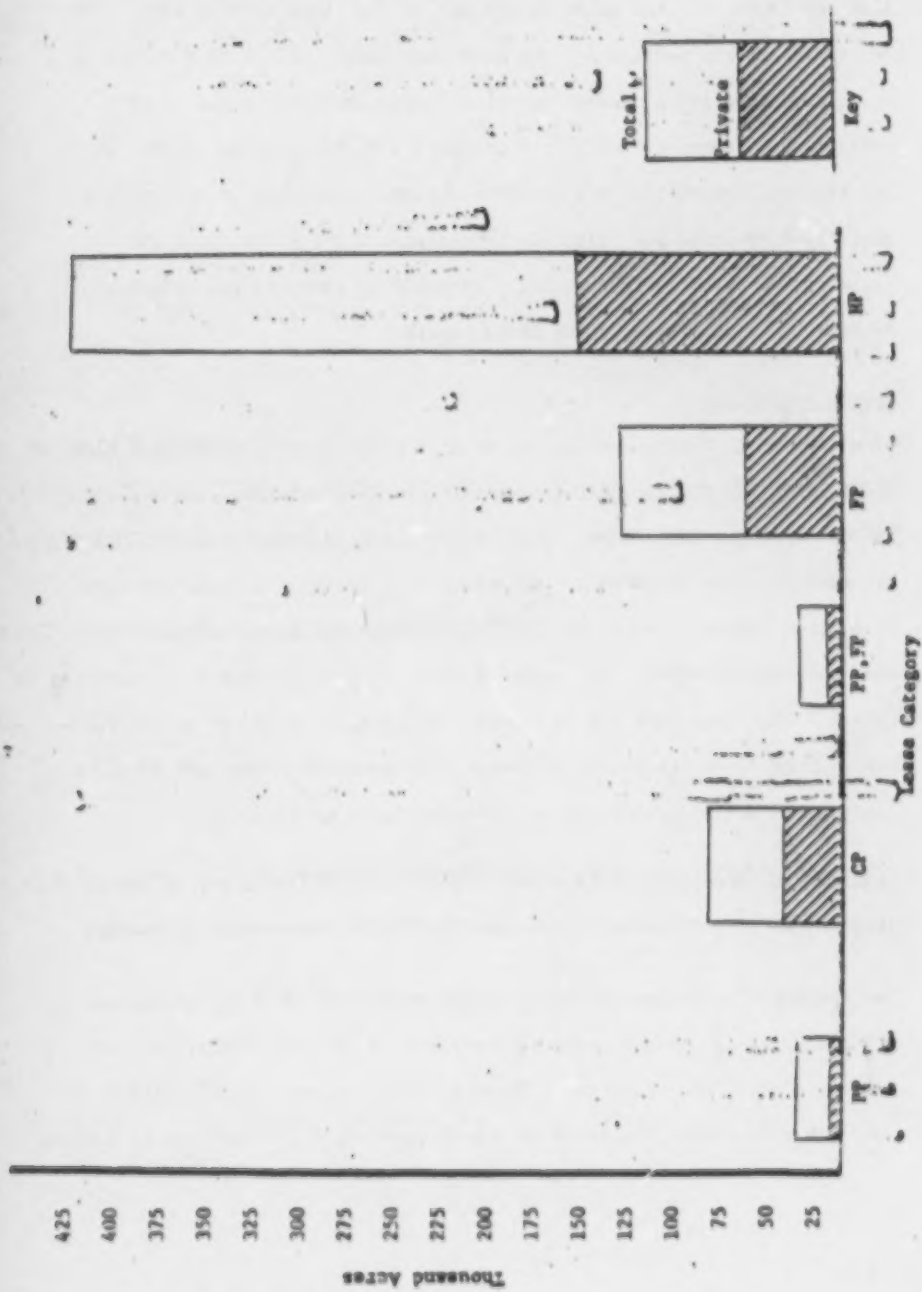
There are 217 leases obtained by preference right method and 250 leases obtained competitively. Preference right leases make up 47 percent of all leases and competitive, 53 percent. Twenty-three percent of the preference right leases and 46 percent of the competitive leases have indicated production at present or in the near future. Moreover, 77 percent of the preference right leases and 53 percent of the competitive leases have not indicated any production plans. Table 13 indicates percent of leases in preference right leases which have no indicated plans for future production and 26 percent of the total 467 leases are competitive leases which have indicated no plans for future production. This would seem to indicate that the performance with respect to production are somewhat better with competitive leasing than with preference right leasing, but further study is needed to determine to what extent.

Total acreage under lease is 681,812.44 acres of which 261,431.63 acres (38%) is private surface. With respect to individual categories it is found that 17 percent of the total acreage is in the currently producing category, 19 percent in PP, 19 percent in PP and 61 percent in the NF category.

In the private surface category 15 percent is currently producing, 1 percent in PP, 4 percent in PP, PP, 23 percent in PP and 57 percent of the private surface in the NF category. Figure 2 gives a graphical representation of total acreage and private surface acreage.

The average lease size for the PP category is 1603.39 acres, for PP 434.5 acres, for PP 1621.97 acres and for NF 1720 acres per lease on the average.

Figure 2 Total Acreage and Private Surface in Each Lease Category



Also the lease size increases as the age of the lease becomes less. The amount of private surface follows this same trend. There is a higher percentage of private surface in the currently and future indicated production categories than in the categories without future plans. On the average, competitive and preference right leases are about the same size, 1464.99 acres per lease for competitive and 1478.90 acres per lease for preference right leases. Appendix A, gives an indication of average lease size held by the large lessees.

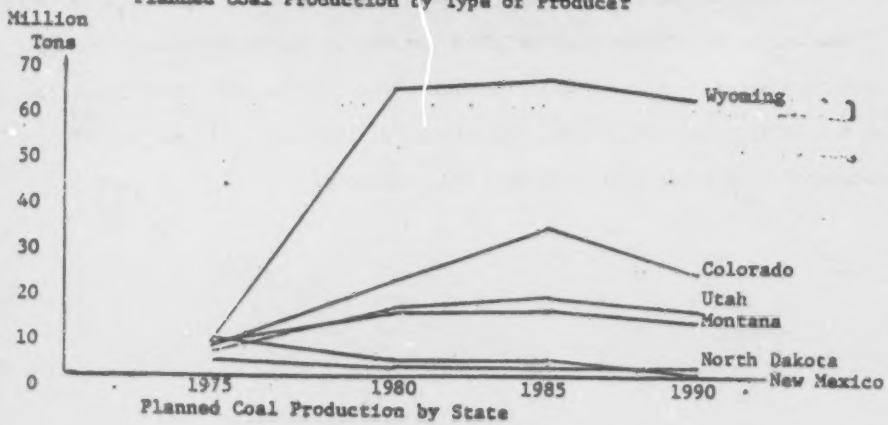
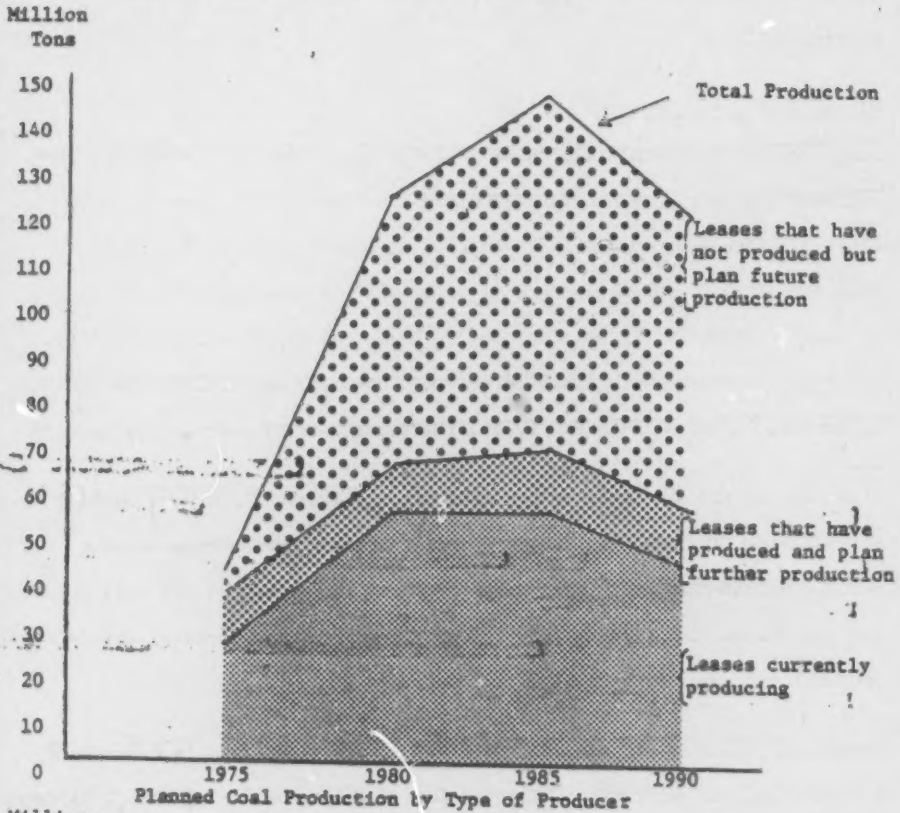
Future Production

With respect to future production, we find that ~~leases covering 47,000 acres, with 107 thousand acres of private surface ownership, have plans for extensive future production. Most of the expanded production will come from the surface mines of Wyoming.~~ Colorado, Utah and Montana will increase production somewhat, while ~~New Mexico and Washington production will increase over the next 15 years.~~ The major increase in coal production illustrated in Figure 3 will come from the 79 leases that have not produced in the past. Fifty-three currently producing leases will increase output and 31 older leases that had no production in 1974 will again produce.

~~About two-thirds of the future coal production from the group of leases that have had no past production will come from new surface mines in Wyoming.~~

The currently producing leases projected production as a percentage of production of all leases, equals 62 percent of the 1975 production, 44 percent of the 1980 production, 38 percent of the 1985 and 37 percent of the 1990 production. Reserves in the CP category are 10 percent of surface

Figure - 3 Planned Coal Production from Federal Leases



mineable coal and 10 percent of underground mineable coal. Reserves average 38.46 million tons for surface mines and 21.84 million tons for underground.

Mining Method and Reserves

~~There are 148 leases considered as mineable by surface mining methods and 117 leases mineable by underground methods.~~ These leases have produced 184.14 million tons in the past and 21.5 million tons in 1974. Their indicated annual production rate is 44.28 million tons by 1975, 125.73 million by 1980, 145.13 million tons by 1985, and 119.05 million by 1990. ~~Reserves associated with these leases are 10,661.17 million tons recoverable by surface mining methods and 5,505.31 million tons by underground methods.~~

With respect to each category the following is found. ~~Fifty-one percent of the current and past production is produced by surface methods and 49 percent by underground.~~ These mines produced 70 percent of all past production and all the current production. Seventy-nine percent of the current production is from surface mines.

~~The 117 category contains 3 percent of the surface mineable leases and 28 percent of the underground mineable leases while containing only 1 percent of the surface mineable reserves and 1 percent of the underground reserves.~~ Seventeen percent of past production came from this category and; 24 percent of the 1975, 9 percent of 1980, 10 percent of 1985 and 7 percent of 1990 indicated production will come from this category.

Coal reserves by production intentions of leaseholders broken down by States is illustrated in Table J. Nearly all the coal reserves of those leases that had produced in the past but have no future production plans is underground coal in Utah.

One-third of the coal reserves of the currently producing mines is surface coal in Wyoming. Two-thirds of the reserves of those leases that have not produced in the past but plan future production is surface coal in Wyoming.

Of the leases with no indicated future production plans, one-half is surface coal in Wyoming and one-fourth is underground coal in Utah.

TABLE J
Coal Reserves on Federal Leases

Category	Col.	Mont.	ND	Utah	Wyo.	Total
Million of Recoverable Tons						
PP s	1.9	1.7	0.7	9.1	0	2.4
u	11.4	0	1.9	0	345.6	7.6
CP s	31.1	306.6	37.7	100.9	0	562.1
u	245.7	0	0	0	144.0	178.3
FP, FP s	18.5	0	9.4	41.5	6.2	12.6
u	86.3	0	0	0	155.4	18.7
FP s	182.7	0	35.4	0	137.6	2677.5
u	866.3	0	0	0	145.7	102.5
NP s	38.8	873.1	192.0	113.1	141.7	5126.8
u	174.3	0	55.9	0	2568.8	396.8
Total s	273.0	1171.4	275.2	264.6	285.5	8381.4
u	1384.0	0	57.8	0	3359.5	703.9

The FP category contains 12 percent of the surface mineable and 19 percent of the underground mineable leases. These leases contain 28 percent of the total surface mineable reserves and 20 percent of the underground mineable reserves, averaging 168.51 million tons and 18.27 million tons respectively. Fourteen percent of the 1975 indicated production, 47 percent of the 1980, 52 percent of the 1985 and 55 percent of the 1990 indicated production is within this category.

The MP category contains 57 percent of the surface mineable leases and 48 percent of the underground mineable leases while containing 61 percent of total surface mineable reserves and 58 percent of the underground mineable reserves. The average being 76.30 million tons and 19.73 million tons per surface and underground mineable lease respectively.

Age

The age of the leases within the categories vary widely and span a 50 year period. The greatest number of leases, though, are in the 5-10 and 10-20 year old age group. These account for 74 percent of all leases.

Seventy nine percent of the FP category leases are over 20 years old as are 70 percent of the PP, FP leases. The average age of lease for these two groups is 32 years and 30 years of age respectively.

Roughly half of the leases in the CP category are under 20 years old and half are over 20 years old, the average age being 23 years old. The FP and NP categories are relatively young with the latter being the youngest. Ninety-eight percent of the FP and NP categories leases are under 20 years old. They average 12 and 10.5 years old respectively.

Lease Category By State

An aspect which has been presented, but only in an unconsolidated way, is the categories of leases within a State.

A more detailed tabular presentation is given in Appendix B.

Briefly, it is found that in Colorado 75 percent of the leases have indicated plans for future production and 25 percent have no plans for future production. In Montana 35 percent of the leases have indicated future production. In New Mexico only 18 percent of the leases have indicated future production, in North Dakota 32 percent, in Utah 19 percent, future production, and in Wyoming 26 percent have indicated future production.

Conclusion and Interpretation of Coal Lease Data

The leases that have ceased production have done so primarily because of their small size, small coal reserves, small output and because 96 percent of their coal reserves is recoverable only by underground mining methods. The requirements of the Federal Coal Mine and Safety Act of 1969, as amended, made most of these mines uneconomical to operate or to bring up to standard. Also 25 percent of these leases are over 40 years old and 55 percent are over 30 years old, thus, many of the lease may be due to expire within the near future. The cumulative production of these 65 leases is only 23.4 million tons, averaging less than 360 thousand tons

per lease which is small and probably inefficient and non-competitive when compared to today's scale of production.

The leases that have temporarily stopped producing, but plan to again produce have many of the characteristics of those leases that have ceased producing and have no future plans. The difference is that the leases that have stopped producing only temporarily have a much larger percentage of surface recoverable coal reserves than the leases that seem to have stopped producing permanently. Also, a larger proportion (77 percent), of the leases that plan to resume production were obtained through the competitive method, which may indicate their seriousness of actually producing coal rather than speculating or merely obtaining a land position.

Those leases that plan to start producing coal for the first time will do so because they have tremendous reserves of surface recoverable coal, mostly in Wyoming.

The newer leases that do not plan any production also have huge surface coal reserves in Wyoming. The leases without production plans hold large quantities of underground reserves, nearly all in Utah, which is not currently competitive with surface recoverable coal.

The major coal production from Federal lands in the next 15 years according to responses on the USGS questionnaire will come from surface deposits in Wyoming, with smaller amounts from Colorado, Utah and Montana.

APPENDIX A

Concentration of Federal Coal Leaseholds
Top 20 Lessees, U.S. Totals

Lessee	(Parent Company)	Total Acreage Under Fed. Coal Lease	Total Federal Leases	% of Total Fed. Coal Lse. Acreage
1. Peabody Coal Co.	(Kennecott Copper Co.)	83,778 acres	49 leases	10.7%
2. Garland Coal & Mining Co.		45,993	27	5.9
3. Consolidation Coal Co. (Continental Oil Co.)		45,452	26	5.8
4. Resources Co. et al (Ariz. Pub. Serv. & San Diego Gas & Elec.)		39,355	20	5.0
5. Pacific Power & Light		35,079	19	4.5
Top 5 Total		249,657 acres	141 leases	31.9%
6. El Paso Natural Gas		27,019 acres	15 leases	3.5%
7. Utah International, Inc.		24,228	26	3.1
8. Kemmerer Coal Co. (Lincoln Corp.)		22,854	16	2.9
9. Richard D. Bass		20,701	1	2.6
10. Atlantic Richfield		19,186	6	2.5
Top 10 Total		363,645 acres	205 leases	46.4%
11. U.S. Steel Corp.		18,959 acres	20 leases	2.4%
12. Consol. Coal & Kemmerer Coal Co. (Cont. Oil & Lincoln Corp.)		18,746	10	2.4%
13. Carter Oil Co. (Exxon Corp.)		15,491	3	2.0
14. Industrial Resources, Inc.		14,929	6	1.9
15. Sun Oil Co.		14,680	1	1.9
Top 15 Total		446,450 acres	245 leases	57.0%
16. Kaiser Steel Corp.		14,617 acres	9 leases	1.9%
17. Decker Coal Co.		13,610	3	1.7
18. Kerr McGee Corp.	(Pacific Power & Light)	13,289	7	1.7
19. Evans Coal Co.		12,622	8	1.6
20. Western Coal Co.		12,289	6	1.6
Top 20 Total		512,877 acres	279 leases	65.5%
U.S. Total		781,763 acres	536 leases	100.0%

CONCENTRATION OF FEDERAL COAL LEASEHOLDS
Top 5 and 10 Lessees, By State

State	Federal Lessee	Fed. Lse. Acreage in State	Fed. Lse's. in State	% of Fed. Lse. Acreage in State	% of Total Fed. Coal Lease Acreage
ES0					
	1. Republic Steel Corp (Ala.)	2,388 acres	1 lease	59%	less than 1%
	2. Peavley & Smith (Kty.)	1,282	1	32	less than 1
	3. Peabody Coal Co. (Ala.)	200	1	5	less than 1
	4. Collins (ohio)	144	1	4	less than 1
	5. Helen Mng. Co. (Penn.)	80	2	1	less than 1
	Top 5 Total	4,094 acres	6 leases	100%	.5%
	State Total	4,094 acres	6 leases	100%	.5%
ALASKA					
	1. Istibelli Coal Mine, Inc.	1,915 acres	2 leases	74%	less than 1%
	2. Alaska State Bank	600	1	23	less than 1
	3. Estate of B. Agostino	79	1	3	less than 1
	Top 3 Total	2,594 acres	4 leases	100%	.3%
	State State	2,674 acres	4 leases	100%	.3%
CALIFORNIA					
	1. Dixie & Reeves	80 acres	1 lease	100%	0%
COLORADO					
	1. Kemmerer Coal Co.	16,269 acres	10 leases	13%	2%
	2. Industrial Resources, Inc.	14,929	6	12	2
	3. Peabody Coal Co.	10,306	8	8	1
	4. Consolidation Coal Co.	10,015	7	8	1
	5. U.S. Steel Corp.	9,471	15	8	1
	Top 5 Total	60,990 acres	46 leases	49%	7.8%

CONCENTRATION OF FEDERAL COAL LEASEHOLDS
Top 5 and 10 Lessees, By State

State	Federal Lessee	Fed. Lse. Acreage in State	Fed. Lse's. in State	% of Fed. Lse. Acreage in State	% of Total Fed. Coal Lease Acreage
MONTANA	6. Utah International, Inc.	8,071 acres	6 leases	7%	1%
	7. Atlantic Richfield	7,462	3	6	less than 1
	8. Mid-Cont. Coal & Coke	6,065	8	5	less than 1
	9. Garland Coal & Mining Co.	5,433	3	4	less than 1
	10. United Electric Coal Co.	4,842	2	4	less than 1
	Top 10 Total	92,864 acres	68 leases	76%	11.9%
	State Total	121,470 acres	113 leases	100%	15.6%
	1. Decker Coal Co.	13,610 acres	3 leases	38%	2%
	2. Western Energy Co.	7,073	2	20	less than 1
	3. U.S. Steel Corp.	5,096	2	14	less than 1
NEW MEXICO	4. Peabody Coal Co.	4,307	1	12	less than 1
	5. Pacific Power & Light Co.	3,067	2	8	less than 1
	Top 5 Total	33,153 acres	10 leases	92%	4.2%
	State Total	36,232 acres	17 leases	100%	4.6%
	1. Western Coal Co.	12,289 acres	6 leases	30%	2%
	2. Consolidation Coal Co.	9,303	5	23	1
	3. Gulf Oil Corp.	8,156	4	20	1
	4. Seneca Oil Co.	6,336	1	15	less than 1
	5. Peabody Coal Co.	2,044	1	5	less than 1
	Top 5 Total	32,128 acres	17 leases	95%	4.9%
	State Total	40,958 acres	28 leases	100%	5.2%

CONCENTRATION OF FEDERAL COAL LEASEHOLDS
Top 5 and 10 Lessees, By State

State	Federal Lessee	Fed. Lse. Acreage in State	Fed. Lse.'s. in State	% of Fed. Lse. Acreage in State	% of Total Fed. Coal Lease Acreage
-------	----------------	-------------------------------	--------------------------	------------------------------------	---------------------------------------

NORTH DAKOTA

1. Knife River Coal Co.	7,792 acres	6 leases	48%	less than 1%
2. North American Coal Co.	2,843	3	17	less than 1
3. Kaulkol-Noonan, Inc.	2,486	2	15	less than 1
4. Kerr McGee Corp.	2,034	1	12	less than 1
5. Consolidation Coal Co.	601	3	4	less than 1
Top 5 Total	15,756 acres	15 leases	97%	2.0%
State Total	16,235 acres	18 leases	100%	2.1%

OKLAHOMA

1. Garland Coal & Mining Co.	37,115 acres	21 leases	43%	5%
2. Evans Coal Co.	12,622	8	15	2
3. Lone Star Steel Co.	10,172	6	12	1
4. Petroleum Int'l., Inc.	9,110	3	11	1
5. Cameron Coal Co.	4,464	3	5	less than 1
Top 5 Total	73,438 acres	41 leases	84%	9.4%
State Total	87,014 acres	53 leases	100%	11.1%

OREGON

1. Pacific Power & Light Co.	4,866 acres	2 leases	90%	less than 1%
2. Mandrones et al.	538	1	10	less than 1
State Total	5,403 acres	3 leases	100%	.7%

CONCENTRATION OF FEDERAL COAL LEASEHOLDS
Top 5 and 10 Lessees, By State

State	Federal Lessee	Fed. Lac. Acreage in State	Fed. Lac's. in State	% of Fed. Lac. Acreage in State	% of Total Fed. Coal Lease Acreage
UTAH					
1.	Peabody Coal Co.	43,160 acres	31 leases	16%	6%
2.	Resources Co., et al.,	39,355	20	15	5
3.	El Paso Natural Gas	27,019	15	10	3
4.	Consolidation Coal Co.	25,533	11	10	3
5.	Consol. Coal & Kemmerer Coal Co.	18,746	10	7	2
Top 5 Total		153,813 acres	87 leases	58%	20%
6.	Utah International, Inc.	16,157 acres	20 leases	6%	2%
7.	Kaiser Steel Corp.	14,617	9	5	2
8.	Nevada Electric	10,377	8	4	1
9.	North American Coal	8,905	8	3	1
10.	Jessie H. Knight	7,850	4	3	1
Top 10 Total		211,719 acres	136 leases	79%	27%
State Total		268,555 acres	197 leases	100%	34%
WASHINGTON					
1.	Wash. Irrigation & Devel. Co.	521 acres	2 leases	100%	less than 1%

CONCENTRATION OF FEDERAL COAL LEASEHOLDS
Top 5 and 10 Lessees, By State

State	Federal Lessee	Fed. Leas. Acreage in State	Fed. Leas's. in State	% of Fed. Leas. Acreage in State	% of Total Fed. Coal Lease Acreage
WYOMING:					
1.	Pacific Power & Light Co.	27,146 acres	15	14%	3%
2.	Peabody Coal Co.	23,761	7	12	3
3.	Richard D. Bass	20,701	1	10	3
4.	Carter Oil Co.	15,491	3	8	2
5.	Sun Oil Co.	14,680	1	7	2
	Top 5 Total	101,779 acres	27	51%	13%
6.	Atlantic Richfield Co.	11,724 acres	3	6%	2%
7.	Ark Land Co.	11,656	8	6	1
8.	Kerr McGee	11,255	6	6	1
9.	Reynolds Mining Corp.	9,418	5	5	1
10.	Energy Development Co.	8,683	1	4	1
	Top 10 Total	154,515 acres	50	77%	20%
	State Total	199,944 acres	91	100%	26%

APPENDIX B

TABLE B-1 STATUS OF COLORADO LEASES BY LEASE CATEGORY

Category	No. Leases	No. Leases	Type Lease	Total acreage	Private Surface, Acres	Mn. Leases	1974 Production	Prod. (Bill. Tons)	Planned Production (Bill. Tons)			Reserves (Bill. Tons)			Less Than 5	Greater Than 49						
									FF Comp.	FF	FF	1975	1980	1985		1990	5	9	5	5-10	10-20	20-30
FF	10	0	3	6	1,041.30	440.72	0	11	-	3.30	-	-	-	1.40	31.44	0	0	1	3	3	4	
CF	34	11	3	11	34,890.14	7,304.95	2	12	2,312.123	20.20	1.65	6.24	7.35	6.09	31.12	205.46	1	1	0	1	4	3
FF, FF	55	13	5	10	9,430.33	3,815.82	0	15	-	3.30	2.21	5.40	6.36	5.37	18.34	86.34	0	0	3	4	3	5
FF	54	17	30	24	47,875.67	35,959.15	4	52	-	-	4.32	12.14	19.72	14.06	102.74	864.33	0	20	27	1	0	0
FF	17	4	15	2	27,409.77	7,145.77	3	14	-	-	-	-	-	-	36.75	174.20	0	12	5	0	0	0
Total	113	54	54	57	121,470.43	54,666.51	9	106	2,312.123	26.90	0.18	24.28	35.31	25.42	279.90	1,264.85	1	41	40	9	10	12

TABLE B-2 STATUS OF INDIANA LEASES BY LEASE CATEGORY

Category	No. Lessees	No. Leasees	Type Lease	Total Acreage	Private Surface, Acres	Mining Method	No. Lessees	1974 Production	Accum. Prod. (Mill. Tons)	Planned Production (Mill. Tons)	1975	1980	1985	1990	Reserves (Mill. Tons)	Less Than 5	5-10	10-20	20-30	30-40	Greater Than 40
PP	3	3	1	2	200.00	170.00	3	0	-	0.16	-	-	-	-	1/	1/	0	0	1	1	1
CP	6	5	1	5	10,928.65	10,525.65	6	0	4,486,418	22.96	0.50	15.50	15.70	13.70	1/	1/	1	0	4	0	1
PP, PP	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
PP	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
MP	0	6	1	7	35,103.62	34,318.45	0	0	-	-	-	-	-	-	873.13	0	0	6	2	0	0
Total	17	14	3	14	36,232.27	34,967.10	17	0	4,486,418	23.32	0.5	15.50	15.70	13.70	1,179.05	0	1	6	1	1	2

1/ Due to small number of lessee reserve figures deleted so as to not reveal possible proprietary information.

TABLE B-3 STATUS OF NEW MEXICO LEASES BY LEASE CATEGORY

Category	No. Leases	No. Leases	Type Lease PR Comp.	Total Acreage	Private Surface, Acres	Mining Method Mo. Lease B U	1974 Production	Accum. Prod. (Mill. Tons)	Planned Production (Mill. Tons)				Reserves (Mill. Tons) B U	Less Than 5	Greater Than 40							
									1975	1980	1985	1990			5-10	10-20	20-30	30-40				
PP	10	9	6	4	920.70	400.70	2	8	-	0.27	-	-	-	0.72	1.89	0	1	0	1	5	3	
CP	2	2	2	0	4,272.36	4,272.36	2	0	1,053,218	1.23	1/	1/	1/	1/	1/	0	0	2	0	0	0	
PP,FP	1	1	1	0	2,570.13	1,978.19	1	0	-	0.71	1/	1/	1/	1/	1/	0	0	1	0	0	0	
FP	2	1	0	2	4,365.60	841.00	2	0	-	-	1/	1/	1/	1/	1/	0	0	2	0	0	0	
NP	13	6	9	4	28,149.53	18,905.53	6	5	-	-	-	-	-	191.98	55.88	0	5	8	0	0	0	
Total	28	19	18	10	40,958.12	26,197.78	15	13	1,053,218	2.21	9.70	3.00	4.00	0	275.21	57.77	0	6	13	1	5	3

1/ Due to small number of leases reserve and production figure deleted so as to not reveal possible proprietary information.

TABLE 8-4 STATUS OF NORTH DAKOTA LEASES BY LEASE CATEGORY

Category	No. Leases	No. Leases	Type Lease	Total Acreage	Private Surface, Acres	Mining Method, No. Leases	1974 Production	Accum. Prod. (Mill. Tons)	Planned Production (Mill. Tons)	1975	1980	1985	1990	Reserves (Mill. Tons)	Less Than 5	5-10	10-20	20-30	30-40	Greater Than 40
PP	4	4	0	4	840.36	840.36	4	0	5.36	-	-	-	-	9.00	0	0	2	1	0	1
CP	4	3	0	4	4,997.44	4,997.44	4	0	13.02	1/	1/	1/	1/	1/	0	1	0	1	0	1
PP, CP	2	2	0	2	2,726.02	2,726.02	2	0	3.00	1/	1/	1/	1/	1/	0	0	1	0	0	0
BP	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
MP	0	4	2	6	7,761.95	7,711.95	9	0	-	-	-	-	-	113.15	0	1	4	0	0	0
Total	10	15	2	16	16,325.75	16,275.75	19	0	19.36	2.75	1.65	1.65	1.65	266.70	0	2	5	2	0	2

1/ Due to small number of leases reserves and production figures deleted so as to not reveal possible proprietary information.

TABLE B-5 STATUS OF UTAH LEASES BY LEASE CATEGORY

Category	No. Leases	No. Leases	Type Lease	Total Acreage	Private Surface, Acres	Mining Method	1974 Production	Accum. Prod. (Mill. Tons)	Planned Production (Mill. Tons)	1975	1980	1985	1990	Reserves (Mill. Tons)	Less Than	5-10	10-20	20-30	30-40	Greater Than 40	
FF	31	19	9	22	23,876.79	2,641.93	0	31	15.86	-	-	-	-	0	345.61	0	2	4	6	12	7
CP	14	10	0	14	10,331.65	6,098.79	0	14	41.25	3.44	4.40	4.63	4.94	0	144.00	1	1	3	4	2	3
FF, CP	10	6	1	9	12,221.75	2,624.28	2	8	24.09	1.38	4.49	5.28	2.10	6.20	135.35	0	2	0	2	3	3
FF	12	6	0	13	10,334.75	640.83	7	6	-	0.77	0.96	9.66	8.13	137.60	145.70	1	1	10	1	0	0
MP	131	21	94	37	195,790.45	1,619.17	20	109	-	-	-	-	-	141.45	2568.84	2	84	38	5	0	0
Total	199	62	104	95	268,555.39	13,335.00	29	168	79.36	5.79	18.05	19.37	15.17	285.45	3359.50	4	90	55	18	17	13

TABLE B-6 STATUS OF MINING LEASES BY LEASE CATEGORY

Category	No. Lease	No. Lessees	Type Lease	Total Acreage	Private Surface, Acres	Mining Method	1976 Production	Accum. Prod. (Mill. Tons)	Planned Production (Mill. Tons)			Reserve (Mill. Tons)	Less Than 5	Greater Than			
									1975	1980	1985	1990		5-10	10-20	20-30	30-40
PP	6	6	4	2	830.00	130.00	2	4	-	-	-	-	2.40	7.56	0	1	3
CP	13	8	3	10	30,985.42	6,800.42	13	0	9,539,571	7.95	25.31	25.26	19.67	542.10	187.30	1	3
PP, CP	3	2	0	3	2,431.54	180.00	2	1	-	1/	1/	1/	1/	1/	0	0	0
CP	8	5	6	2	37,536.62	23,046.77	5	3	-	1/	1/	1/	1/	1/	1	4	0
NP	62	21	21	41	128,070.39	86,552.65	37	24	-	-	-	-	5,126.83	396.70	4	27	2
Total	92	42	34	58	199,944.21	117,219.84	59	32	9,539,571	33.16	65.25	68.70	63.11	8,381.44	703.80	6	34

1/ Due to small number of lessors reserve and production figure delayed so as to not reveal possible proprietary information.

APPENDIX II
Responses to Additional Questions



UNITED STATES GENERAL ACCOUNTING OFFICE
WASHINGTON, D.C. 20548

RESOURCES, COMMUNITY,
AND ECONOMIC DEVELOPMENT
DIVISION

3 JUN 1983

The Honorable James A. McClure
Chairman, Committee on Energy
and Natural Resources
United States Senate

Dear Mr. Chairman:

Enclosed for the record are our responses to the questions of Senators Bumpers and Johnston transmitted on May 24 and 25, 1983, respectively.

We trust that our response will assist your Committee's deliberations over whether to continue or postpone scheduled regional coal sales.

If further elaboration on our report, or any of the attached information, is required, please contact Ned Smith or Ed Joseph of my staff on 254-6937.

Sincerely yours,

A handwritten signature in dark ink, appearing to read "J. Dexter Peach".

J. Dexter Peach
Director

Enclosures (2)

ENCLOSURE I

ENCLOSURE I

GAO RESPONSES TO SENATOR BUMPERS' QUESTIONSQuestion 1

My primary criticism of the Department's coal leasing procedures and specifically those used in the Powder River Basin coal sales last year is that those procedures do not guarantee that the government will receive fair market value for its coal reserves. Your report concludes that the Powder River Basin leases offered last April and last October brought roughly \$100 million less than they were worth. Can you summarize for the Committee why you believe the Department's procedures for analyzing bids and making fair market value determinations are inadequate?

GAO's Response

Briefly, these postsale fair market value determination procedures--even as revised for the October 1982 sale--rely too much on the presence of bidding competition at the sale itself. In the absence of such competition, the Department has no clear gauge of bid acceptability. In addition, the current postsale procedures are too flexible--permitting inconsistent applications such as those discussed on pages 54 and 55 of our report. Thus, we believe that the procedures should be revised to include specific quantitative tests applicable whether or not adequate bidding competition is present at the sale itself. These tests should be applied uniformly and place greater reliance on prior comparable sales or recent arm's length sales.

Question 2

In the October 1982 followup sale in the Powder River Basin, Interior used a new sealed bidding system. Do you believe that this system will solve the problem?

GAO's Response

It remains to be seen how well the sealed bidding system Interior adopted for the October sale will work in the future. Although the new system was an improvement on the flawed entry bidding procedures used in April, the small, two tract October sale was not a clear test of the sealed bidding concept. Also, as expected, each tract received only one bid. Further, the new system will not in itself solve the problems we have identified. As discussed above, new postsale procedures are needed as well.

ENCLOSURE I

ENCLOSURE I

Question 3

The results from the Powder River Basin sale show that, for nearly every tract, industry offered bids that were only marginally higher than the published entry level bids. Do you have any evidence which indicates that industry would not have paid any more for the leases if those entry level bids had been higher--even as much as \$100 million higher? Do you have any evidence which indicates that industry would have paid more than your estimate of the coal's value if different bidding procedures had been employed?

GAO's Response

We believe the best evidence relating to how much (more or less) industry might have paid for Powder River coal is actual bidder behavior at the April and October 1982 sales. In April, two maintenance tracts received no bids, even with the Department's reduced entry prices, and the tracts were not reoffered in October because so little interest was shown by potential bidders. On the other hand, at the October sale, one bidder doubled its rejected April bid for the Rocky Butte tract. Another April bidder paid 2.5 cents per ton for the Cook Mountain tract which Interior's Economic Evaluation Team originally valued at a negative 7.2 cents per ton and priced at the then regulatory minimum of \$25.00 per acre, or 0.29 cents per ton. In addition, in three instances in April, two bidders competed for offered tracts, and in each instance bidding competition increased the sale price of the lease. This happened even in the case of the West Decker bypass tract, where actual competition between the two bidders involved was questionable.

Question 4

Can you summarize the procedural changes you believe the Department should make before proceeding with any further competitive leasing. Has the Department made any of these changes?

GAO's Response

As recommended in our report, we believe Interior should develop

- a detailed analysis of the economic and geologic variables affecting the value of a Federal coal lease, including how changes in one variable affect the others;
- new internal procedures for conducting coal lease valuations, including criteria for comparable sales analyses--refining the technique used to develop original minimum acceptable bids for the April 1982 Powder River sale,

ENCLOSURE I

ENCLOSURE I

- new guidelines for using untried or experimental bidding systems--such as entry level and intertract bidding--at regional coal lease sales, including limits on the percentage of the leasing target permitted under such experimentation;
- minimum regulatory selling prices for coal leases in each Federal coal region on a cents per ton basis; and
- revised fair market value determination procedures that include specific quantitative tests (1) applicable whether or not adequate bidding competition is present and (2) placing greater reliance on prior comparable sales and recent arm's length sales in the absence of bidding competition at the actual sale.

To our knowledge, the Department has not made these changes.

Question 5

Can you think of any reasons why the two major coal lease sales planned for July and December of this calendar year should not be postponed until the Department improves its leasing procedures?

GAO's Response

We cannot provide a reason why these scheduled lease sales should not be postponed. Interior needs time to strengthen the serious weaknesses we identified in its leasing, valuation, and fair market value determination procedures. Some of these weaknesses can only be addressed by detailed analyses. Even with an all-out effort to bring about needed improvements, there may be too little time before the July sale. Though it is less clear whether or not a postponement of the December sale would be necessary, until we learn of Interior's plans to act upon our recommendations, we cannot provide a reason why it should not also be postponed.

Question 6

In your opinion, could the Department continue to make necessary bypass and maintenance leases in the short-term?

(NOTE: GAO is recommending legislative changes which would allow Interior to "negotiate" prices for maintenance leases.)

ENCLOSURE I

ENCLOSURE I

GAO's Response

In lieu of regional sales, bypass and maintenance coal could be leased under the Emergency Coal Leasing Program (43 C.F.R. 3425.1-4) which is the subject of a forthcoming GAO report to be published later this year.

ENCLOSURE II

ENCLOSURE II

GAO RESPONSES TO SENATOR JOHNSTON'S QUESTIONSQuestion 1

You have recommended that legislation be amended to authorize Interior to negotiate the essentially noncompetitive production maintenance leases. What assurances would this method provide that the Federal Government would receive a fair return for its leases? Do you not feel that a negotiation process between the Department and industry might lead to some of the same abuses which occurred in the Powder River lease sale? What sorts of controls might be implemented, in addition to public comments, to prevent the receipt of less than fair market value?

GAO's Response

Strong controls--such as those proposed in our recommendation--would provide needed assurances of a fair return for leased coal. These would include public disclosure of the process at four key points, and detailed internal Departmental documentation of the entire process. At the same time, under the concept we propose, Interior could supplement its own best lease value estimates with actual company data on costs and revenues over time. Better lease valuation data--safeguarded where proprietary, fully documented in use, and subject to internal administrative controls--could actually decrease rather than increase Departmental discretion and thus decrease the potential for abuse. In addition, the controls we propose foster periodic evaluation.

Question 2

A number of groups, including the Office of Technology Assessment, have suggested that production maintenance tracts are actually more valuable to coal companies than new production tracts due to their strategic location. Was this consideration factored into your evaluation of the fair value of these tracts?

GAO Response

Yes. This consideration contributed to our eliminating, in our revisions of Powder River coal tract values, the "50-50 split" policy used before the April 1982 sale to cut the value of several maintenance tracts in half. It also influenced our decision (see p. 60 of our report) to use full tract value as a "bid acceptance test" for Powder River maintenance tracts. In addition, the possibility that maintenance tracts may actually be of greater than normal value to an adjacent operator is part and

ENCLOSURE II

ENCLOSURE II

parcel of our recommendation that such tracts be sold by negotiation.

Question 3

Are market forces the best indicator of fair market value, as the Department has contended?

GAO's Response

We would agree that truly competitive market forces are the best indicator of fair market value. In this sense, fair market value can be seen as the product of competition in the marketplace. However, we would add that when genuine competition at the sale itself is limited--as it was at the Powder River sale--prior comparable sales and/or recent arm's length sales are the best indicators of market value.

Question 4

Do you see any advantage to competitively bidding royalties rather than bonus bids as a means of securing a Federal coal lease?

GAO's Response

We have not analyzed the potential advantages and disadvantages of competitively bidding royalties rather than bonus bids as a means of securing a Federal coal lease. Such royalty bidding is among the alternative bidding systems featured in OCS leasing. However, because oil and gas resource occurrence differs substantially from the way coal resources occur in the environment, experts question the applicability of royalty bidding and other alternative bidding systems to Federal coal leasing. It is our understanding that the comparatively predictable manner in which coal resources occur is the principal argument against the use of alternative bidding systems. This predictability takes away the potential "windfall" which may on occasion be realized if large oil and gas deposits are discovered offshore.

~~DEI~~ RESPONSE TO SENATOR JOHNSTON QUESTIONSQUESTION 1A

Please provide for the record a detailed response to the criticisms made by the General Accounting Office in its May 11, 1983, report on the Powder River Basin coal lease sale.

ANSWER

The GAO report, in contrast to other reports and statements released on this subject, is objective and professional. While we strongly disagree with several of the report's assumptions, conclusions and recommendations, we generally agree with two fundamental GAO conclusions stated in the report:

1. Estimating the value of a Federal coal lease is at best a difficult process.
2. GAO believes the approach used by the evaluation team, although imperfect and in need of some adjustment, was reasonable under the circumstances and provides a technically sound basis for estimating the fair market value of Powder River tracts.

The Department's principal objection to the GAO report is its contention that the fair market value of Powder River leases sold was \$100 million higher than the total of the accepted high bids. We frankly cannot understand how GAO could reach that conclusion after acknowledging that the evaluation of Federal coal leases are difficult and that the Department's evaluation team used a reasonable approach for estimating the value of the Powder River tracts. The report itself shows that the total of the accepted high bids approximately equalled the final Departmental estimates of tract values after adjustments for resource data errors and updates.

The Department's evaluation of Federal coal lease tracts involves a series of detailed and complicated calculations. The calculations are an attempt to characterize nine basic factors affecting the value of a coal tract through equations using in excess of 40 different elements. These calculations have been assembled into a computer model that was first developed in 1976 and has been continuously updated to account for changes in conditions such as tax law and mining technology.

In the GAO's evaluation of the Department's conduct of the Powder River lease sale, its investigators learned of the calculations and the computer model. The GAO correctly identified some of the more critical factors and requested the Department to make several runs of the model inserting the GAO's adjustments for some factors and, most importantly, ignoring the production rate factor. Since the GAO ignored the production rate adjustment, it is not surprising that the resulting tract values differed by a significant amount. This is the principal source of the dramatic "losses" claimed by the GAO in the sale.

The results obtained from economic models are driven by the assumptions made. The question presented by the GAO report is, "Whose assumptions are more appropriate, the Department's evaluation team's or GAO's?" We prefer to rely on the Department's professionals who have spent most of their careers evaluating coal resources, especially since GAO itself expresses confidence in their methodology. The GAO fails to consider that fair market value requires a willing seller and a willing buyer; the seller's estimate of value is not fair market value until a buyer willing to pay that price comes forth. The GAO has presented no evidence to indicate that industry would have been willing to bid the extra \$100 million that GAO claims was lost; in fact, two tracts received no bids even at the entry levels set by the Department.

We cannot agree with GAO's recommendation to postpone scheduled regional coal sales while correcting what GAO perceives as deficiencies in the Department's fair market value determination procedures. We believe that the current procedures assure receipt of fair market value in full compliance with statutory requirements. We certainly will continue to analyze and improve our procedures to address the dynamic nature of the coal market; however, a postponement or moratorium on coal sales would only distort the market and make evaluations more, rather than less, difficult. We agree with several of the specific GAO recommendations and, in some cases, are actually engaged in the recommended activities.

We are striving to develop the best possible procedures to assure receipt of fair market value without improperly dictating or influencing that value. We continue to believe that fair market value can only be determined in the marketplace and that the Department's responsibility is to see that bids for Federal coal leases accurately reflect the state of the market.

QUESTION 1B

When did Interior request its Inspector General to investigate the allegations of unauthorized disclosure of MAB's? Why was this not done before the sale, as required under Departmental procedures?

ANSWER

The Department's Inspector General began his investigation on or about April 20, 1983, after the General Accounting Office (GAO), which was investigating the Powder River sale, reported to the Department that it was unable to identify the source of the alleged unauthorized disclosure. The Inspector General was not asked to investigate the alleged disclosure before the sale because the Department quite simply considered any such disclosure, while unfortunate and not in accordance with Departmental policy, immaterial to the conduct of the sale. After the sale when the alleged disclosure became an issue, the Office of the Inspector General was consulted. That office advised Departmental officials that, since GAO had instituted an investigation of the sale, an investigation by the Inspector General would be duplicative. The Inspector General began his investigation only after GAO concluded its investigation without resolving the alleged unauthorized disclosure.

QUESTION 2A

What changes in procedures did you make between the April and October sale? Are you contemplating further changes based on the GAO report?

ANSWER

The October 1982 followup Powder River regional coal lease sale was held under different coal management regulations (see 43 CFR 3400) than the April sale earlier in the year. The table below summarizes the differences in lease sale procedures:

	<u>April Sale</u>	<u>October Sale</u>
Minimum Bids:	"Entry level" minimum acceptable bids of 8, 5, and 2 1/2 cents per ton and \$25.00 per acre.	\$100/acre for new production tracts and "representative market value" for production maintenance tracts.
Bidding Method:	Sealed bidding followed by oral auction if more than one <u>qualified</u> bid (e.g., at or above "entry level") was submitted.	Sealed bidding only.

The Department has had final fair market value procedures under consideration since receiving public comments on the Minerals Management Service interim coal lease sale procedures of September 13, 1982. A decision document is currently being drafted that will include as options several of the recommendations of the GAO report (GAO/RCED-83-119).

QUESTION 2B

Why didn't Interior make appropriate adjustments to the regional team's original estimate of fair market value (FMV) instead of changing to an experimental entry level bid system only 6 weeks prior to the lease sale?

ANSWER

The Department's decision to adjust its coal lease sale procedures for the April 28, 1982, Powder River sale was based on concerns about the best methods for achieving FMV for Federal coal leases that date back at least to 1979. The July 1979 coal management regulations (43 CFR 3400) recognized the difficulties inherent in determining the FMV of Federal coal leases. A Departmental task force was formed to prepare a Secretarial Issue Document regarding the determination of FMV for coal leases. This task force specifically noted that FMV for coal leases should steer a course midway between seeking to maximize capture of economic rent and satisfying the minimum legal FMV obligations. The former Secretary adopted this conclusion in his FMV decisions on May 28, 1980.

The concern about proper procedures to set MABs and to determine FMV continued with the change of Administration. In early 1981, in response to the Secretary's call for the elimination of excessive, burdensome, and counterproductive rules and procedures, a series of issue papers were developed. One such paper called for the use of entry level bids and a revised post-sale analysis for determining FMV.

In early 1982, the Minerals Management Service (MMS) prepared an estimate of the value of the tracts to be offered for sale in the Powder River Region. Consistent with the Department's policy established in 1979, the MMS envisioned that the resulting estimates of value for the individual tracts would be used as minimum acceptable bids. When the estimates of value were reviewed at the MMS Headquarters Office, it was determined that the estimates were too high for the purpose of entertaining bids for the coal leases. This determination is consistent with standard bidding theory which warns that minimum bids set at a high level can chill bidding competition.

QUESTION 3

Please elaborate on your post-sale procedures for determining whether bids represented fair market value.

ANSWER

The following procedures on Federal coal lease sale fair market value (FMV) determinations were published for public comment. These procedures have been put forward by the Director, Minerals Management Service (MMS), with the concurrence of the Mineral Management Board. They were effective September 13, 1982, as interim procedures.

The following new procedures for post-sale evaluation of coal lessees will expedite the leasing process while meeting the legal requirements to obtain FMV for lease resources. These procedures provide for the MMS to recommend minimum bids. They also identify how MMS will screen the high bids on each tract as to competition and comparable value in making recommendations that the high bid has met the FMV requirement. Additionally, the procedures direct MMS to note to the Bureau of Land Management (BLM) special circumstances which may indicate it is in the best interest of the Government to accept the high bid. Any special circumstances used to justify acceptance of a high bid must be fully documented.

A. Presale Procedures

1. Maintain data base on coal sales: Each region will routinely maintain a data base containing assignments, and resource and bidding information on all tracts previously offered for lease and on tracts to be offered. The Tract Delineation Summary Report will also be used to break tracts up into groups of high, medium, low and very low development potential based on minability, transportation, marketability, and surface ownership. Moreover, data and trends will be maintained on regional coal markets including prices, sales, and the demand for new coal reserves.

2. Establish a "minimum bid" for each lease: The BLM will announce in the sale notice a "minimum bid" for each tract up for lease. The "minimum bid" is the lowest bid that may be considered for a Federal coal lease. Bids below the "minimum bid" will not be considered.

The "minimum bid" for a lease may be set as follows:

- At the level of \$100 an acre for stand alone tracts or tracts having an estimated value of less than \$100.
- At a level which would represent the Department's best estimate of the bypass and maintenance tracts and other tracts where there is a minimum value greater than \$100 per acre.

The cutoff level or representative market value may be drawn from a range of values related to the certainty of the estimate.

The Minerals Manager will prepare and forward to BLM a suggested "minimum bid" for each tract as requested. This recommendation will be based upon the information available to MMS as the tract's value, and other circumstances of the lease offering. For example, is this an initial offering, a reoffering, a maintenance or bypass situation? The analysis and supporting data for this recommendation will be made part of the case file at MMS and available for use by the Sales Panel.

3. Additional input to BLM: The MMS will also provide BLM with a written report on mining methods, estimated coal reserves by bed, coal quality, royalty, rental, lease bond recommendations, and an evaluation of public comments of FMV and Maximum Economic Recovery.

B. Sale Procedures

1. The "minimum bid" will be published in the Federal Register notice of sale.

2. Bidding procedures: All bids will be submitted in sealed form. For a bid to be a qualifying bid, it must be equal or exceed the "minimum bid" for the lease as published in the sale notice. Non-qualifying bids will not be considered by the Department. The sale notice will clearly indicate that the "minimum bid" for a lease does not necessarily constitute and acceptable FMV bid for that lease and that the determination of the results of the bidding, indications of competition, and other factors that are indicative of the current market value of the coal leases in the region.

C. Post-Sale Procedure Guidelines

The MMS will review all high qualifying bids for each Federal coal lease according to the following guidelines and make a recommendation to the Sales Panel as to whether the high bid for each lease offering meets the test for FMV. Guidelines numbers 1. and 2. will be used to make the recommendations while guideline number 3 will analyze special circumstances so that these may be noted with the recommendation.

1. Competition Analysis: A determination of adequate competition will be conducted for each tract receiving bids to see whether adequate bidding competition was clearly demonstrated for the respective tracts. The determination of whether adequate bidding competition has been demonstrated will proceed as follows. A profile of each tract and its bidding will be put together which focuses on three elements: (1) Competitive market; (2) bidder participation; and (3) high bid offered. Then, if the elements combined indicate adequate bidding competition, the high bid for the tract can be recommended as meeting the FMV requirements. The factors to be considered under each element are as follows:

Element 1: Competitive Market:

- The known existence of special bidding advantages or disadvantages for any companies bidding or potentially bidding for the tract at issue.
- The known existence of a relationship among bidders on the tracts which might influence their competitiveness.

Element 2: Bidders Participation:

- The number of reasonable bids submitted for the tract. Only reasonable bids should be considered. In cases where the "minimum bid" is set at the \$100 an acre level, there is a chance that a number of non reasonable bids near this level will be submitted on valuable tracts. These bids may not constitute real competition and should be excluded from the analysis. Reasonable bids would be determined based on a screen as in element 3.

Element 3: High Bid Offered:

- Make a qualitative ranking type assessment of high bids on comparable tracts in this sale and prior sales.

For example, high bids considered clearly competitive if examination of the sale results reveals all of the following:

Element 1:

- No bidder has a major bidding advantage over the other bidders for the tract, and there are no known relationships between the bidders which would influence their competitiveness.

Element 2:

- Two or more reasonable bids were submitted for the tract.

Element 3:

- The high bid is within the range of qualitatively ranked comparable tracts adjusted as necessary.

2. Detailed comparable high bid analysis: Tracts whose high bids are not deemed to be clearly competitive will be further analyzed. This will be done using the values based on comparative sales high bids. This post-sale analysis will utilize all the tract delination information plus prior sales, as well as all bidding data obtained from the sale. An estimate of a value representative of market value is obtained through comparability analysis.

The post-sale comparability analysis for each tract will produce a geometric mean comparable-value estimate for each tract analyzed (depending on how many sale tracts are selected as the base tracts for the comparability analysis). This is an estimate of the market value of the tract. If the actual high bid for the tract is above the average, a recommendation will be made that the bid be accepted as meeting the FMV requirement.

In the event that satisfactory comparable sales on acceptable bids are not available, then other approaches, such as value in use or income, can be substituted. A post-sale adjustment may be made for current market conditions.

3. Examination for special circumstances: The MMS will supply a bid acceptance/rejection recommendation based on the above analysis. Additionally, a report containing the rationale for the recommendation will be made a part of the MMS case file and will be available for use by the Sales Panel. Normally, this recommendation will be supplied within 30 days. Where MMS finds special circumstances which may have an overriding effect on the decision by BLM to accept or reject the high bid on a tract, MMS will inform BLM when the recommendation is supplied. These special circumstances may be derived from at least the following areas of analysis or any other special circumstances observed.

a. Adjustment to comparative values for Government losses from the delay in the sale of tracts.

b. Adjustment to comparative values to reflect factors not considered in the comparative analysis but which would serve important public objectives for example, bypass situations.

c. Adjustment to comparative values to reflect uncertainties concerning the comparability of the tracts used for comparison or to reflect uncertainties in the adjustment and estimation process.

QUESTION 4

What analyses did you use to arrive at the conclusion that, as stated in your testimony, "... all of the high bids accepted by the Department in the Powder River sale met or exceeded the presale Minerals Management Service estimates except the high bid for ... Little Rawhide Creek ...?" Don't GAO's findings contradict this?

ANSWER

The statement in Assistant Secretary Carruthers' testimony was based on a simple comparison of the magnitude of the high bids with the magnitude of the Minerals Management Service's (MMS') presale estimates of tract values. Contrary to popular belief these presale estimates of value were not discarded but were used as one of the criteria to determine if bids should be accepted or rejected. The GAO claims that the Department's estimates of value should have been higher because the Department used inappropriate adjustments to several important factors in its evaluation model. We disagree with GAO and believe that its adjustments of those factors are inappropriate. The fact remains that the high bids for all but one tract exceeded the Department's presale estimates (the presale estimate for the Spring Draw tract was corrected after the sale to eliminate a calculation error), estimates which GAO states were calculated using a methodology that is reasonable and technically sound.

QUESTION 5

The evidence of the sale shows that Industry repeatedly bid just at or over the entry level bid published for a particular tract. For instance, in the Little Rawhide tract, the entry level bid was set at \$7.2 million; the actual high bid was \$7.4 million. In the South Duck Nest tract, the entry level bid was set at \$3.6 million; the actual high bid was 3.6 million. What led you to believe that these tracts would be "bid up" from the entry level price when they were maintenance tracts which were essentially desirable to only a single bidder.

ANSWER

Lack of recent lease sales prevented the Department from knowing enough about recent market conditions in the Powder River region to accurately estimate fair market value. Therefore, we published entry level bids to encourage bidder participation. Even if there was not strong competition, the Department had post sale procedures to determine if the high bids represented fair market value. One high bid, slightly above the entry level, was rejected. Although one might expect less competition for maintenance tracts, if the bids were too low, a speculator for the secondary market could bid up the price through oral bidding. The West Decker maintenance tract did in fact receive spirited bidding competition.

QUESTION 6

What is the Department's definition of "competition" as applied to a coal lease sale? Do you consider a single bidder on a tract adequate competition to ensure the receipt of fair market value?

ANSWER

The word "competition" as applied to a coal lease sale has two meanings. One meaning is whether the sale is open to any potential bidder who wishes to bid. Thus, "competitive" sales are distinguished from "noncompetitive" methods of leasing coal. Noncompetitive methods of leasing coal include preference rights, negotiated sales, and exchanges.

A second meaning is a measure of the degree of competitive behavior exhibited at a competitive sale. Even though the sale may be open to anyone to bid, there may be many or few bidders who actually submit bids. The degree of competition may be said to be greater at a sale at which many bids are received.

The Department, except in certain cases specified by statute, must lease coal competitively. This means that the lease must be offered in a public sale with the opportunity for anyone to submit a bid. If only one bidder takes part in the sale, that does not ensure the receipt of fair market value. In such cases, the Department has always looked for other evidence to evaluate the bid. This evidence usually takes the form of appraisals based on a comparable sale or on projected income using a discounted cash flow analysis.

QUESTION 7

In your testimony you assert that the Federal Government is a "monopolist". First explain what you mean by this. Secondly, how does the Department plan to discontinue what you view as the "practice of leasing as a monopolist"? Also, is there any practical or historical basis for your claim that "American consumers have paid [a hidden tax] because of monopolistic pricing of Federal coal reserves"? In fact, doesn't the history of our coal leasing program contradict this as indicated by the fact that private sales have frequently drawn larger bonus bids?

ANSWER

If the Department restricts the quantity of coal resources offered, higher prices (bonus bids) could be obtained because the Federal Government has the ability to act as a monopolist in the market for coal resources; the Federal Government owns approximately 60 percent of western coal resources and controls another 20 percent by virtue of its land ownership patterns. By restricting Federal coal leasing, the western supply of available resources is potentially reduced by 80 percent. As with any commodity, when coal resources become relatively scarce (not available), the price will increase. With less coal available and less competition among the coal suppliers (coal companies), utilities will pay higher prices for the coal. The higher cost to the utilities is then passed on to the consumer.

The Department's objective in providing broad offerings of Federal coal leases is not to create a surplus or shortage of coal resources on the market, but to lease sufficient coal resources to allow for efficient coal development. Coal resources that are not leased are not available to compete for contracts to supply coal to coal users. The Department wants to be certain that enough coal is leased to ensure that the market for coal supply contracts will be fully competitive. Since 1979, the General Accounting Office, Council on Wage and Price Stability, Department of Energy, and Department of Justice, as well as private consultants working for these agencies, have vociferously argued for this policy based on their concern that a restrictive leasing policy would have the effect of increasing coal prices to consumers. Their reasoning contains two key elements. First, coal is not a homogeneous commodity; therefore, it is essential that coal resources that can be produced most efficiently for each user be available, e.g., under lease. Second, to ensure adequate competition, there must be a sufficient number of producers to meet the needs of each individual coal user.

A policy of restricting supply by restricting the quantity of coal resources offered for lease sale would not be in the public interest. The demand for coal would still be satisfied in the marketplace without Federal coal leasing. However, the demand would be satisfied at a higher cost to the consumer. The cost to the consumer will also be increased under

a policy of restricted leasing in situations where the unleased Federal resource is the most cost effective to develop. Development of coal resources will occur to meet the consumer demand; however, it will occur on tracts that have a higher development cost.

The history of the coal leasing program does not contradict the testimony. The government's increasing the royalty rate to 12 1/2 percent certainly encouraged private landholders, States, and Indian tribes to charge more for their coal either through bonus and/or royalty. Private coal sales can be direct sales by lease with various royalty rates and conditions. Just comparing bonuses considering the quantity and quality of the coal, location, terms of the lease, surface ownership, etc., is meaningless.

QUESTION 8

In your chart showing Powder River Basin coal reserves, you indicate 6.1 billion tons of coal were nominated by industry but the Department only offered 2.3 billion tons. How many tons of coal does the Department plan to offer in the upcoming San Juan and Fort Union lease sales?

ANSWER

In the San Juan River region 1.5 billion tons have been delineated. Industry expressed interest in leasing 1.6 to 2.5 billion tons of coal. The regional leasing level is .66 to .83 billion tons of recoverable reserves. The leasing level is currently under study for potential revision downward to .44 to .5 billion tons of recoverable reserves.

For the Fort Union sale, 1.9 billion tons were delineated. Industry's expressions of interest totaled 2.0 to 2.5 billion tons. The regional leasing level is .72 to 1.05 billion tons of recoverable coal reserves.

The decision on the actual quantity of coal to offer for sale has not been made. After considering the findings in the regional environmental impact statement, the regional coal team's recommendations and the Governor's recommendations, the Secretary will select the tracts and tonnages to offer for sale.

QUESTION 9

You have a chart showing the level of leasing and production on Federal coal lands. At first glance, your chart would indicate that in the past decade production for Federal coal leases has far exceeded the amount of coal leased. However, I note that production is indicated by tens of million of tons, while tons leased is shown by 1000's of million of tons. Wouldn't your chart have provided a more accurate picture if the two axes were graphed on the same scale? Is it not true that only a little over 18 percent of existing Federal leases produced coal last year? (There are 616 existing leases of which 111 produced coal in 1982. One hundred and ninety four have mine plans but this still accounts for less than one-third of existing leases: 31.5 percent). In other words, the rate of leasing far exceeds the rate of production.

ANSWER

In order to put the production and leased reserve information on the same graph the two different scales were utilized and clearly identified. The intention was not deceive or confuse the audience but to graphically show the dramatic changes in leasing activity and coal production from Federal leases. Through the 1970's, production from Federal leases has been on an increase from less than 10 million tons per year in 1982. During that period, Federal coal leasing went from a peak of over 1 billion tons leased in 1971 to zero tons leased in 1972 and in 1978, less than 10 million tons were leased. In FY 1982, of the 616 Federal coal leases, 1 were reported to be in production. Production from these leases totaled 108.0 million tons. Until the current round of leasing that began in 1981 was initiated, the rate of Federal leasing was flat and did not reflect the increases in the utilization of the resource. In fact, throughout the 1970's, Federal leasing was not even keeping ahead of production of the resource.

QUESTION 10

The Spring Draw tract was devalued as a result of a discovery that an error had been made in calculating the stripping ratio. Where did the information come from which led to this discovery? What about the subsequent discovery of a higher BTU content than originally figured--was this also taken into account in estimating the lease value?

ANSWER

Immediately after the sale, the economic evaluation personnel from Casper, and Reston began to evaluate the high bids to determine if they represented fair market value. During this process, they reexamined some of the basic geologic data for the Spring Draw tract. A map of the Spring Draw tract showed sections, drill holes, and geologic information such as the stripping ratios. From this map, it appeared that the stripping ratio used in the tract evaluation was much lower (better) than the stripping ratio indicated by the maps. The Chief of Resource Evaluation, North Central Region (Casper), then requested the geologists and engineers to recalculate the stripping ratio for this and other tracts. They did find that the original stripping ratio for the Spring Draw tract was in error, but that stripping ratios for the other tracts were correct. The economic evaluation personnel then revalued the Spring Draw tract using the correct stripping ratio.

The discovery that coal in the tract had a higher BTU content than originally calculated was made several weeks after the sale. The economic evaluation personnel again revalued the tract. Although the estimated value of the tract had increased, the high bid still represented fair market value.

QUESTION 11

The bid on the Cook Mountain tract was the only acceptable bid in the Powder River lease-sale according to GAO. This tract was originally valued at \$25/acre, or .029 cents/ton. However, due to an administrative error the tract was offered at the sale at an entry level bid of 2.5 cents/ton and was sold at the figure? How does the Department explain the fact that a company bid approximately 85 times DOI's original value of the tract? If Coal Creek had been offered at 2.5 cents/ton wouldn't the market have paid several million dollars more than the selling price?

ANSWER

The Cook Mountain tract minimum entry bid level was set at 2.5 cents per ton because it was to be part of a complex intertract bidding experiment. Remarkably, the 2.5 cents per ton was bid even though it had a 4.9 stripping ratio. We can only speculate as to why this occurred. The buyer may have wanted a strategic position in coal reserves and was not overly concerned with the stripping ratio. Other reasons could be proposed but we see no point in mere speculation. Although the bid was 85 times the original estimate, this is less than 2.5 cents per ton. Evaluation of mineral leases is not an exact science; there is great uncertainty and rarely will its estimators agree on the precise value.

If Coal Creek had been offered at 2.5 cents (or even 10 cents) per ton it might have sold. Although this is sheer speculation. This small business administration tract had two active bidders, but one refused to bid even 1 cent per ton.

QUESTION 12

Why did the Department claim that the Little Rawhide tract, which is a maintenance tract, had the potential for a bypass situation? Conversely, it was one of the more desirable tracts according to GAO because it was situated next to unleased Federal coal and had abundant coal reserves — 90 billion tons of coal with 100 foot seams.

ANSWER

The Little Rawhide tract was one of the more desirable tracts offered and it is a maintenance tract. After considering the facts, the economic evaluation team concluded that there was a reasonable probability of the tract being bypassed. The operating mine controls coal to the north and east of the tract and the Campbell County (Gillette) Airport lies immediately to the east.

There is sufficient unleased Federal coal to the south to start a new mine. However, the City of Gillette lies to the south and is expanding northward toward the tract. Continued growth of Gillette would extend the city limits to the unleased coal so that it would not be feasible to start a new mine. Even if there were not laws against blasting near the city limits (which there are), for socioeconomic reasons, it would be undesirable to encourage development of a new strip mine so close to the city.

QUESTION 13

In your application of the land-use planning criteria to the Powder River tracts, to what extent was "reclamability" of the land considered?

ANSWER

In looking at the reclaimability of lands prior to leasing, the Department has the results of technical investigations, experiences of other mines in similar conditions, and other studies and investigations at its disposal in making leasing decisions. Much land where reclamation is questionable is screened out under multiple use tradeoff criteria during land-use planning. Reclaimability is an integral factor during the site-specific analysis and the tract ranking process; tracts ranked low with respect to reclamation potential are the last to be selected for leasing, if at all.

The 1979 coal management regulations specifically did not include reclaimability as one of the unsuitability criteria to be applied during land-use planning because it was impractical and inefficient to attempt to determine reclamation potential over the large areas included in a land use plan. Instead, reclaimability was to be determined at the mine permit application review time when sufficient detailed information relative to a specific tract could be gathered. The present Administration continued that policy and no changes were made to the regulations concerning reclaimability. The Surface Mining Control and Reclamation Act of 1977 (SMCRA) only requires that lands be judged reclaimable before they are mined, not before they are leased. The Department has consistently held, since 1979, that it is neither feasible nor necessary to include reclaimability as one of the unsuitability criteria to be applied during land-use planning.

Mined land reclaimability, while not explicitly part of the land-use planning criteria for the Powder River tracts, will be addressed for these tracts by major overburden and soil/revegetation studies conducted for the purpose of preparing a mining permit application to satisfy the requirements of SMCRA. This document will be prepared by the lessee and submitted to the appropriate governmental agencies for approval prior to any mining taking place on the lease. The lessee must show to the satisfaction of the regulatory agencies that reclamation is feasible for the specific type of mining method proposed. These studies are best conducted by the lessee after the lease is issued, because the information is an essential component of the permit application in any case.

QUESTION 14

You used two comparable sales as part of your assessment of the fair value of the Powder River tracts. The two "comparable tracts" were leased prior to 1976. Consequently, in April 1982, these comparable sales were subject to meeting diligence requirements by 1986. Did your analysis take into account the fact that the comparable sales had substantially tougher diligence requirements than the sales being offered? If not, why? (Secretary Carruthers has stated on several occasions that the production rate of a tract is a significant factor in determining its value.)

ANSWER

The economic evaluation personnel at Casper carefully analyzed differences, in the lease terms of the two comparable tracts with the offered tracts. If an adjustment were to be made, the value of the offered tracts would be reduced to reflect the tougher terms. In the professional judgement of the Casper evaluation staff, no adjustment was warranted. The following facts explain the rationale. The lease terms of the comparable tracts would be revised in 1986 to the same terms as the offered tracts. The Casper staff had seen mine plans for the comparable tracts. The comparable tracts would not be in full production before 1986 when the royalty would increase to 12 1/2 percent, the same rate as for the offered tracts. The comparable tracts could meet the new diligence requirements, but so could the offered tracts.

QUESTION 15

I have been told that in the April 25 Federal Register there was a notice regarding the use of "bidding credits" against the value of leases for companies who have had to relinquish leases for any number of reasons. Is this true, and if so, what is the status of this proposal? Would it apply to companies who have lost a lease due to a failure to meet diligent development requirements?

ANSWER

The April 25, 1983, Federal Register notice referred to an entry in the Department's semiannual regulatory agenda which proposed a clarification and modification of the existing rules on certificates of bidding rights. The rulemaking may or may not be proposed soon for public comment.

Actually, there are very few reasons for issuing certificates of bidding rights. Bidding rights were created when the Federal Coal Leasing Amendments Act of 1976 removed the Department's general authority to issue a Federal coal lease in exchange for relinquishment of another Federal coal lease or interest therein. There may be instances where the United States and a coal lessee or preference right lease applicant may mutually benefit from relinquishment of a coal lease or preference right lease application to protect the lands potentially affected by mining. Coal lessees and preference right lease applicants could relinquish their interests for certificates of bidding rights, equal to the fair market value of the interest relinquished. Bidding rights would not be issued to lessees where leases terminated for failure to meet diligence requirements.

QUESTION 16

Has the Department performed an economic analysis of the relationship between Eastern and Western coal in demand centers, such as Texas, where they compete?

ANSWER

The Department has closely coordinated its economic analyses with the Department of Energy (DOE). The regional demand scenarios used in the Bureau's regional production forecasts have been those provided by DOE. Some alternative assumptions have also been used at the request of the States and regional coal teams but the base case scenario is from DOE where much more effort has been expended on regional energy demand and supply. The Bureau plans to conduct additional sensitivity analysis using different assumptions for supply, demand, transportation, and environmental regulations.

In addition to regional production, the National Coal Model provides coal distribution forecasts. Although there are not sensitivity analyses to compare, the base case results can be compared with the 1981 actual coal distributions. As can be seen from the attached forecasts project only moderate changes over the next dozen years. As these tables were compiled specifically for flows of western coal, all distribution is not shown.

Complete tables would show the demand regions where competition exists between eastern and western coal in the north central industrial regions. To be more accurate, this is where competition exists between eastern, central, and western coal. West of the Mississippi River, western coal has a real advantage. Illinois tends to be the meeting point where the local coal's location advantage is offset by its high sulfur content and low sulfur eastern and western coal can compete. Another well known point that would be shown by a complete distribution table is that Texas is not a competition region between eastern and western coal. In 1981, Texas supplied 57 percent of its own coal demand. Another 42 percent came from Colorado, Wyoming, and Montana. Only 0.2 percent came from Eastern States.

Forecasts indicate that domination by instate supplies will increase in the future. Other markets share changes indicated by the forecasts are generally small. One point to note in examining the distribution tables is that the 1981 numbers do not include totals of exports, but as these basically involve States where western coal is not a factor, the only changes would be in the total for the eastern demand regions and the U.S. total and corresponding percentage. The chart showing total market share includes exports.

In summary, the demand region where eastern, western, and central coal compete is the north central industrial region. Only small market share changes are indicated in the Bureau's forecasts in this region. The small national market share increase forecasted for western coal is due to the more rapid increase in demand in those regions in which western coal is dominant.

Forecasted 1985 coal distribution (thousands of tons)

Destination	Source of coal					Total		Σ from West	
	Total	Co	Holder	By	Ut	Mo	Mid-At		
New England	4184	0	0	0	0	0	0	0	0.02
Mid-Atlantic	107742	0	0	0	0	0	0	3	0.01
E.A. Central	208988	2961	0	32563	571	0	11262	47357	19.02
W.A. Central	98823	449	0	48864	0	15751	12250	77034	78.42
South Atlantic	212640	0	0	0	0	0	0	0	0.02
E.S. Central	16035	0	0	0	0	584	0	584	0.02
W.S. Central	98891	2762	520	45536	0	0	6385	53211	53.82
Mountain	97549	16661	29468	34235	11082	0	5860	97217	99.42
Pacific	15897	0	5899	1164	480	0	2226	9769	61.52
Total	980161	22796	35495	142382	12717	15751	34634	285375	29.12
Percent		2.32	3.74	14.43	1.31	1.63	3.78	29.13	

Forecasted 1995 coal distribution (thousands of tons)

Destination	Source of coal					Total		Σ from West	
	Total	Co	Holder	By	Ut	Mo	Mid-At		
New England	8888	0	0	0	0	0	0	0	0.02
Mid-Atlantic	139232	0	0	0	0	0	0	0	0.02
E.A. Central	297668	1752	0	36728	282	0	7400	44420	15.42
W.A. Central	122812	581	0	67898	0	35361	15389	118969	83.42
South Atlantic	318781	0	0	0	0	0	0	0	0.02
E.S. Central	131643	342	0	0	210	0	0	540	0.02
W.S. Central	101510	3646	12100	44085	0	0	2831	82970	34.22
Mountain	145138	29278	20336	45721	33500	0	8192	144812	99.82
Pacific	31817	0	15989	3399	473	0	10654	38985	96.82
Total	1366531	34797	54513	199161	34281	35361	43714	603757	28.72
Percent		2.53	4.01	14.38	2.53	2.53	3.12	28.72	

Actual 1981 coal distribution (thousands of tons)

Destination	Source of coal					Total		Σ from West	
	Total	Co	Holder	By	Ut	Mo	Mid-At		
New England	1750	0	0	0	0	0	0	0	0.02
Mid-Atlantic	72394	0	0	0	0	0	0	3	0.01
E.A. Central	191812	2807	0	10830	691	0	11790	35918	17.72
W.A. Central	82499	1568	0	25397	289	17529	11331	56346	68.52
South Atlantic	119749	0	0	12	0	0	0	12	0.01
E.S. Central	25570	775	0	0	584	0	0	1359	1.82
W.S. Central	78796	2684	4	33781	0	0	4822	43211	54.82
Mountain	74657	11664	26580	23157	7521	0	3167	74337	99.42
Pacific	14056	785	664	1520	2193	0	5438	10328	98.82
Total	706683	28283	28976	102825	11078	17529	38871	219526	31.02
Percent		2.91	4.13	14.55	1.63	2.53	5.53	31.02	

Forecasted 1990 coal distribution (thousands of tons)

Destination	Source of coal					Total		Σ from West	
	Total	Co	Holder	By	Ut	Mo	Mid-At		
New England	7551	0	0	0	0	0	0	0	0.02
Mid-Atlantic	119494	0	0	0	0	0	0	0	0.02
E.A. Central	273811	919	0	34037	393	0	9666	44415	17.02
W.A. Central	118464	159	0	61456	0	22528	13975	98430	82.72
South Atlantic	285213	0	0	0	0	0	0	0	0.02
E.S. Central	164032	498	0	0	352	0	0	850	0.02
W.S. Central	137054	4324	3386	45844	0	0	2465	58237	42.22
Mountain	125871	31895	27054	43178	24085	0	8167	125469	99.42
Pacific	17526	0	8277	429	437	0	8292	15935	96.72
Total	1171626	24665	39117	107144	25787	22528	42583	345276	29.52
Percent		2.13	3.33	16.81	2.23	1.93	3.43	29.52	

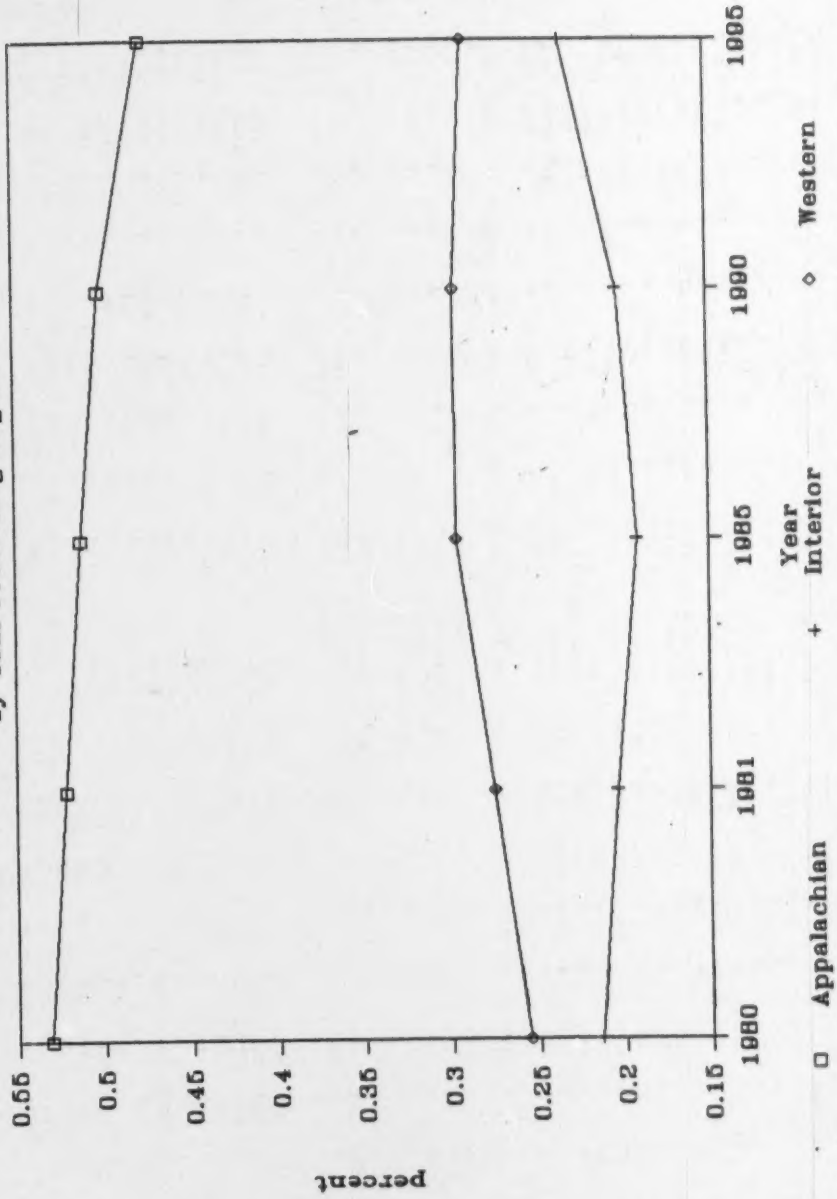
Actual 1961 coal distribution (thousands of tons)

Destination	Source of coal				MT	MT/lt	Total		Total	West	East	
	Total	Co	Mo	By			Total	West				
New England	1750	0	0	0	0	0	0	0	0	0	0.01	
Mid-Atlantic	73394	0	0	0	0	0	0	0	0	0	0.01	
E.S. Central	11012	2007	0	10030	491	0	11790	33910	3	3	15.43	
Illinois	34585	2826	0	8559	0	0	34969	14110	38.43	0	15.43	
Indiana	44076	771	0	2553	490	0	44969	4783	16.41	0	15.43	
Michigan	30153	5	0	0	1	0	30159	4653	15.41	0	15.43	
Ohio	64136	5	0	2004	0	0	64141	2811	4.01	0	14.11	
Wisconsin	14061	0	0	0	0	0	14061	7540	56.51	0	14.11	
E.S. Central	82299	1560	0	25597	209	17575	11331	56340	48.51	0	26.71	
Iowa	21227	541	0	7705	1	0	237	8104	71.81	0	26.71	
Kansas	11471	276	0	8726	0	0	9902	78.51	0	26.71		
Minnesota	13208	21	0	12	0	1002	10953	12058	99.71	0	78.41	
Missouri	23124	500	0	3044	0	0	0	4344	18.01	0	81.41	
Nebraska	5349	262	0	4847	200	0	13	5350	100.01	0	47.91	
North Dakota	13966	0	0	0	1	0	13968	6	13995	100.01	0	100.01
South Dakota	2943	0	0	382	0	2505	13	2900	98.01	0	0	
South Atlantic	119749	0	0	12	0	0	0	12	0.01	0	0	
E.S. Central	79570	775	0	0	504	0	0	1359	1.01	0	0	
Alabama	22529	0	0	0	0	0	0	0	0.01	0	0	
Kentucky	26394	0	0	0	0	0	0	0	0.01	0	0	
Mississippi	3311	775	0	0	504	0	0	1359	0.01	0	0	
Tennessee	23336	0	0	0	0	0	0	0	0.01	0	0	
E.S. Central	70796	2444	0	33701	0	4422	43711	54.01	0	0	0	
Arkansas	6162	0	0	5052	0	0	5052	95.01	0	0	0	
Louisiana	3227	0	0	2971	0	0	2971	99.21	0	0	0	
Oklahoma	9733	0	0	9790	0	0	9790	95.41	0	0	0	
Texas	59625	2444	0	15500	0	4422	75018	92.11	0	0	0	
Montana	74657	11644	20540	23157	7521	0	3487	74537	95.41	0	0	
Arizona	41400	444	13327	0	100	0	0	14199	100.01	0	0	
Colorado	13301	9702	1	3361	4	0	0	13040	98.21	0	0	
Idaho	543	0	0	447	75	0	0	542	97.01	0	0	
Montana	3578	21	0	79	45	0	3413	3578	100.01	0	0	
Nevada	5280	0	0	3002	1	1396	0	5279	100.01	0	0	
New Mexico	11426	130	11289	0	0	0	0	11427	100.01	0	0	
Utah	7049	1062	0	74	5706	0	0	6922	98.01	0	0	
Wyoming	19112	77	0	19175	87	0	73	19112	100.01	0	0	
Pacific	10456	705	444	1528	2193	0	5438	10320	98.01	0	0	
Alaska	800	0	0	0	0	0	0	800	100.01	0	0	
California	3049	671	444	0	1970	0	0	3044	95.01	0	0	
Oregon	1490	2	0	1413	1	0	2	1410	95.21	0	0	
Washington	5096	33	0	115	283	0	4435	5046	97.01	0	0	
Total	700403	20203	20976	107825	11070	17575	30071	219520	31.01	31.01	29.11	
Percent		2.91	4.11	14.51	1.43	2.51	3.31	31.01	1.43	1.43	29.11	

Forecasted 1965 coal distribution (thousands of tons)

Destination	Source of coal				MT	MT/lt	Total		West	East
	Total	Co	Mo	By			Total	West		
New England	4104	0	0	0	0	0	0	0	0	0.01
Mid-Atlantic	107742	0	0	0	0	0	0	0	0	0.01
E.S. Central	240960	2961	0	32543	571	0	11262	47357	15.01	0
Illinois	47352	1767	0	19131	0	0	2659	23537	49.01	0
Indiana	57702	1106	0	7113	571	0	735	9413	16.01	0
Michigan	38400	0	0	0	0	0	5390	5390	14.11	0
Ohio	83107	0	0	2702	0	0	0	2702	3.31	0
Wisconsin	22520	0	0	3537	0	0	2070	6007	26.71	0
E.S. Central	90823	449	0	40044	0	15751	12350	77434	70.41	0
Iowa	21449	449	0	19761	0	0	257	20427	95.21	0
Kansas & Neb.	17244	0	0	14425	0	0	14425	84.01	0	0
Minnesota	14991	0	0	45	0	552	12093	12090	74.71	0
Missouri	25962	0	0	12012	0	0	0	12012	41.91	0
E.S. Dakota	17272	0	0	2071	0	15201	0	17272	100.01	0
South Atlantic	212040	0	0	0	0	0	0	0	0.01	0
E.S. Central	91035	0	0	0	504	0	0	504	0.01	0
Al & Miss	34601	0	0	0	504	0	0	504	1.01	0
Kentucky	34994	0	0	0	0	0	0	0	0.01	0
Tennessee	23040	0	0	0	0	0	0	0	0.01	0
E.S. Central	90091	2742	520	43536	0	4305	53211	53.01	0	0
Ar & Ok & La	30500	906	520	27440	0	0	20950	95.51	0	0
Texas	48503	1776	0	14092	0	0	4305	22253	32.41	0
Montana	97549	14404	29440	89255	11002	0	5000	97217	99.41	0
Arizona	12647	0	12354	0	33	0	0	12347	100.01	0
Colorado	18014	14950	954	2510	0	0	0	18014	100.01	0
Idaho	1359	0	1543	0	0	0	0	1543	100.01	0
Montana	4629	0	3403	5970	1400	0	5000	5014	96.91	0
Nebraska	11249	0	3403	5970	1400	0	0	11249	100.01	0
New Mexico	12043	7	12797	0	0	0	0	12797	100.01	0
Utah	11200	1639	0	0	9441	0	0	11200	100.01	0
Wyoming	21040	0	21040	0	0	0	0	21040	100.01	0
Pacific	10095	0	5099	1164	400	0	2726	9749	41.51	0
Al & Ar & Ne	8095	0	74	1164	150	0	2726	3572	40.11	0
California	4992	0	5075	0	322	0	0	4197	88.41	0
Total	900161	22796	35095	142302	12717	15751	34034	285375	29.11	29.11
Percent		2.31	3.71	16.41	1.31	1.63	3.71	29.11	29.11	29.11

Historical and Projected Market Share by Coal Producing Region



QUESTION 17

What did the post-sale analysis do to remedy the inconsistent evaluations in the Coal Creek and Cook Mountain tracts?

ANSWER

We see no inconsistency in the HMS pre sale evaluation of these two tracts. Both were evaluated by the same method, using the same comparable tract. Our presale estimate of value indicated minimal value. Under our post-sale procedures, we accepted the high bids, which were above our estimate of values.

The Coal Creek tract was offered as a Small Business Administration "set-aside". Even it had two competing bidders; the high bidder won the lease for \$340 per acre or 0.59 cents per ton. The Cook Mountain tract received a bid of \$2,123 per acre or 2.5 cents per ton. We could speculate why the companies bid as they did but see no value to mere speculations.

QUESTION 18

If, as several DOI officials testified, the data on all tracts was reviewed between April 28 and May 4, why wasn't the error on the Cook Mountain tract corrected?

ANSWER

As stated above, no error occurred with regard to the Cook Mountain tract. The Department deliberately set an entry level bid at 2.5 cents-per-ton even though the presale estimate of value for the tract was .029 cents per ton because this tract was included in a proposed intertract sale. The Cook Mountain tract was to be offered along with three other tracts in the intertract sale with the two tracts receiving the highest bids in cents per ton being leased. In order for such a sale to work, all tracts must be offered at the same minimum bid, in this case 2.5 cents per ton. The intertract sale did not occur; the other three tracts were withdrawn from the sale because evidence of surface owner consent was not received. The sale of the Cook Mountain tract went forward at the published entry level bid of 2.5 cents per ton. We are frankly mystified that GAO assumed that an error occurred without asking for clarification from the Department.

QUESTION 19

What action has been taken regarding the illegal coal drilling in the Powder River Basin? Drillings were made at the Keeline tract which was subsequently purchased by the illegal trespasser (Mike Elmore). Has the Department considered cancelling the lease?

ANSWER

Following investigations into the alleged unauthorized drilling in the Powder River Region, 10 individuals and companies were charged in trespass notices with unauthorized exploration drilling. All 10 parties have responded to the notices and the Department is examining the responses to determine the appropriate course of action. These parties are subject to financial penalties if found to have engaged in unauthorized drilling. In addition, the Department may seek cancellation of any leases gained through an unfair bidding advantage acquired as a result of such drilling.

The merger of the Department's onshore mineral management responsibilities into the BLM will help prevent future occurrences of this type. Now, the same office will issue the exploration licenses and collect the exploration data where previously two different offices performed these functions. Exploration data received by the BLM will be routinely checked against the issued exploration licenses to determine whether the exploration was authorized and to take appropriate action if not.

QUESTION 20

What, in your views, are the adverse impacts of illegal drilling?

ANSWER

The most serious impact of unauthorized drilling is that one party will possess geologic and coal resource data not available to other parties and perhaps not available to the Department. Clearly this could give that party an unfair bidding advantage over other parties. In addition, the Department cannot control the location, pace, and impacts of unauthorized drilling. The Department is prepared to deal with those engaged in these activities to the fullest extent of our authority, including seeking the cancellation of any leases obtained as a result of an unfair bidding advantage.

QUESTION 21

We have received conflicting views as to whether MAB's were intended to represent fair market value. In your view, has this been the case?

ANSWER

MAB's may but do not necessarily represent fair market value. MAB's are the reservation prices below which the Federal Government will not even consider bids. They are a reservation price screen designed to help assure receipt of fair market value. Under the pre-Powder River sale, MAB's were implicitly supplied presale in the Notice of Sale as our tentative estimate of the tract's value. During the first Powder River sale, the usual government presale estimate of the tract's value was calculated but it was not published because a new post sale system of a competitive acceptance screen backed by a post sale reservation price screen was adopted instead. It happened that all but one tract whose bids were accepted were accepted based on the presale estimated reservation prices which were allowed for in the new procedures. In addition, one tract was accepted based on the new procedures special circumstances and one was rejected based on new procedure reservation prices. The old MAB and any new ones which we may apply are just screens to help assure fair market value.

QUESTION 22

Mr. Carruthers, you have stated that "the bonus is by far the smallest portion of the Federal interest," yet in BLM's 1984 budget justification, p. 31, table 5, it indicates that rental income is by far the smallest portion of Federal interest in the coal leasing program. (Rentals received for 1982 were \$2.7 million, while bonus payments were in excess of \$7.2 million.) Could you comment on this?

ANSWER

The FY 1984 Budget Justification estimates Bonus at \$7.2 million, Royalties at \$61.0 million and Rent at \$2.7 million. I was referring to Bonus, Taxes, and Royalties and Rents; the latter in combination in the statement you are referring to. Of these three, the bonus is by far the smallest Federal interest.

QUESTION 23

What criteria must a bidder meet to qualify for a small business set-aside tract? Must he indicate his intent to acquire the tract for the purpose of coal mining? Is his record of production on previous tracts factored into this qualification?

ANSWER

All bidders must meet criteria as outlined in 13 CFR Part 121.3-9 (quoted below). The record of production on previous tracts is not factored into his qualifications but he must indicate his intent to acquire the tract for the purpose of coal mining.

This rule establishes a size standard of 250 employees as the maximum size firm which may be eligible to bid for small business set-aside leases of government owned coal land. This rule is necessary so that the Interior Department, which administers the land and leases, can determine which firms qualify to bid for set-asides. The intent of this rule and the Interior Department's program is to give small coal mining firms improved access to government coal lands.

"§ 121.3-9 Definition of small business for sales or lease of government property.

(d) Any firm bidding to lease Government land for purposes of coal mining is classified as small if:

- (1) It is independently owned and operated;
- (2) It is not dominant in its field of operation;
- (3) Together with its affiliates, its number of employees does not exceed 250 persons;
- (4) It maintains management and control of the actual mining operations at the tract; and
- (5) Any transfer of the lease from the holder of the original set-aside must be to another small business within the meaning of this paragraph."

QUESTION 24

We have received conflicting reports from the Department regarding what types of tracts are likely to make up the preponderance of lease sales in the future, some say maintenance production tracts, while others say new production tracts, which is the case?

ANSWER

The following table presents regional coal sale detail which addresses this question.

FY 1984 Regional Sale Tract Detail

Note: Number of tracts and tonnage estimates are still in the preliminary stage and are subject to modification as coal leasing process deliberations and data analysis continue.

<u>Regional Sale</u>	<u>Total Tracts</u>		<u>Maintenance</u>		<u>New Production</u>	
	#	(Million of Tons) Federal Recoverable Reserves	#	(Million of Tons) Federal Recoverable Reserves	#	Millions of Tons (Federal Recoverable Reserves)
San Juan	39	1,500 1/	9	113	30	1,387
Uinta-SW Utah	27	720 2/	16	189.5	9	530.5
Powder River	31	7,300 1/	7	192	24	7,108
So. Appalachian	16	1.2 1/	0	0	16	1.2
Green River-Hams Fork	24	1,000 2/	3	16.5	21	983.5

11

1/ Represents Federal tonnage potentially available for lease. Non-Federal tonnage not available.

2/ Represents Federal tonnage potentially available for lease. Non-Federal tonnage is as follows:
 Uinta-SW Utah: 0
 Green River-Hams Fork: 264 M/T

QUESTION 25

Some sources claim that tracts in upcoming sales have not been extensively core-drilled by the U.S. Geological Survey. Is this true? What is the Departmental procedure for verifying coal quantity and quality prior to offering a lease-sale?

ANSWER

The Bureau of Land Management collects and analyses information about the location, quantity, and characteristics of coal in potential leasing areas as input to the preparation of Resource Management Plans. This is accomplished through field examines, drilling, and coal bed analysis. The reduction in the need for core-drilling by U.S. Geological Survey (USGS) relies on the use of existing data obtained from past USGS activities and data collected from industry.

QUESTION 26

Mr. Carruthers, in discussing your choice of results from economic models used in determining the value of the Powder River coal leases, you make a point of saying: "I'm going with the career professionals who have spent most of their careers evaluating the resources in the various coal fields the Federal Government controls" Please explain this statement in view of the fact that you rejected your own regional economic evaluation team's analysis methodology. According to GAO, the Department's criticism of the regional team's analyses was unwarranted.

ANSWER

I have confidence in our career professionals who have many years of practical experience. Specifically, I strongly support the regional economic evaluation team's analysis methodology used for the comparable sales evaluation of the Powder River tracts. I do not understand how you got the erroneous idea that I rejected their methodology. Possibly it was because we allowed bidding to start at an entry level that for some tracts was below the presale estimate of value. I do not think even the best evaluators using excellent procedures and sophisticated analytical models can precisely determine fair market value presale, particularly since there had been few recent sales. The final fair market value determination can be made only after the sale when the actual bids are examined. Neither buyer nor seller alone can determine fair market value.

DOI RESPONSE TO SENATOR BUMPERS QUESTIONSQUESTION 1

In your statement, you noted that 18 billion tons of the 200 billion tons of Federal coal have been leased. How much of this 18 billion tons has been developed? What is the annual rate of production from Federal coal leases over the past few years? At this rate of production, how long would coal under existing leases last?

ANSWER

Over 1/3 of the existing leases had produced Federal coal through the end of fiscal year 1982. These leases encompass almost 30 percent of the original 18 billion tons of reserves. This actually understates the number of leases that could be considered developed since mines are often made up of several leases. While the mine may be developed and producing according to the mine plan, all of the leases may not have produced yet. By looking at mines that have produced Federal coal the number of leases that can be considered developed increases to 1/2 of the existing leases containing 1/3 of the original reserves. Neither of these measures considers leases issued in the last 2 and 1/2 years which contain over 2.5 billion tons of the 18 billion tons of reserves. Most of these leases are maintenance or bypass tracts for producing mines or are for new mines that are being actively developed. With other new development activity probably over half of the currently leased reserves have been or are being developed.

The Office of Technology Assessment (OTA) study published in December of 1981 reported that approximately one third of the Federal coal leases in 1980 lack an uncertain or unlikely development future. Of the leases issued since 1980 the Department has made a preliminary assessment that most have favorable development potential.

The data upon which the above figures were based are currently being updated as part of a detailed lease-by-lease review in the field. Included will be updated assessments of reserves, mine plan status, and development potential. These updates should be available during the summer.

Over 660 million tons of Federal coal had been produced through the end of fiscal year 1982. One half of this was produced in the last four years.

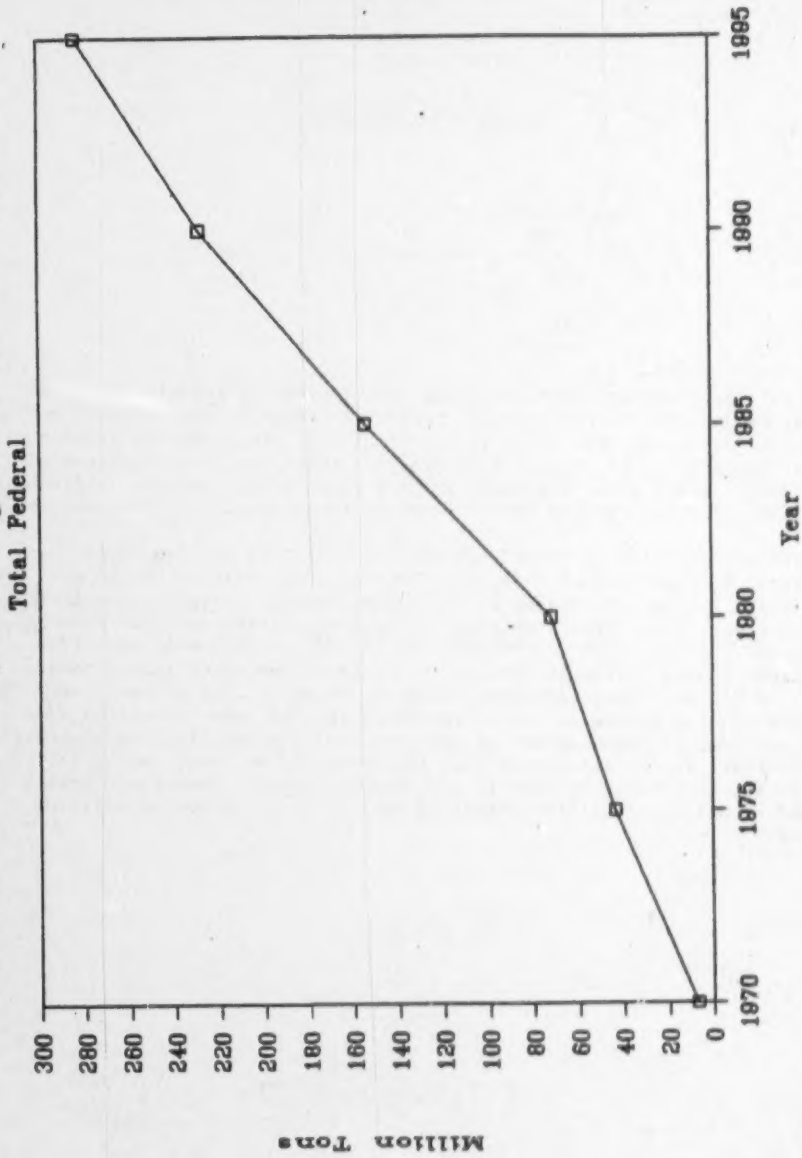
FEDERAL COAL PRODUCTION

Fiscal Year	Million Tons
1979	59
1980	72
1981	95
1982	104

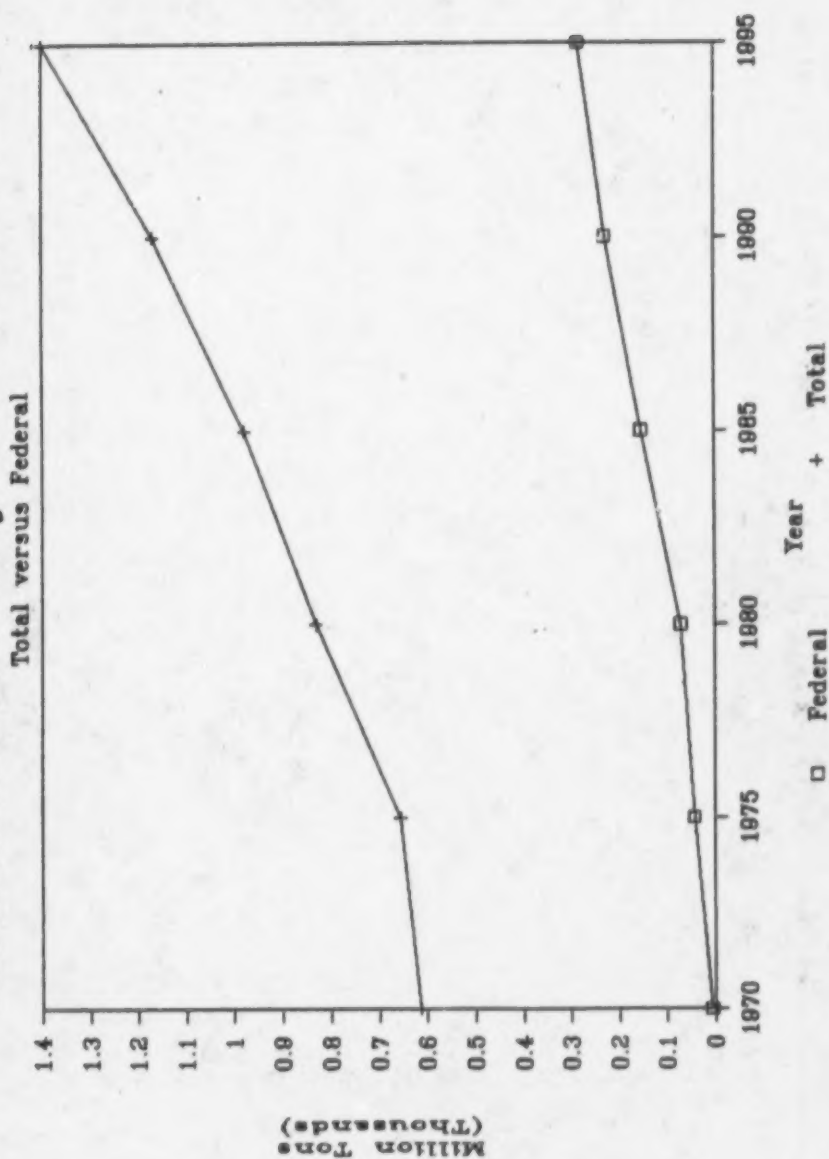
Obviously Federal coal production has been increasing rapidly in recent years. Projections of Federal coal production based on the Bureau's current regional coal production forecasts continue this trend with an average annual increase of 15 million tons per year. This trend is expected to continue at least until the forecast year of 1995 and probably continue and possibly accelerate beyond 1995. Ignoring increases beyond 1995 and assuming

an average mine life of 30 years beyond 1995 this production would require almost 12 billion tons of reserves. Some of those reserves could come from new leases if they are issued within several years. Leases issued later than the next 4 or 5 years will not contribute significantly to production until after 1995. Thus the bulk of the 12 billion tons must come from existing leases. Although the original reserves of these leases totaled about 18 billion tons, remaining reserves are about 17.4 billion tons. Of this amount the Bureau currently estimates that at least 4 billion tons will not produce for economic or environmental reasons, leaving 13.4 billion tons. There are no assurances that this coal is the type, the quality, and in the location necessary to meet future demand. Uneconomic leases should be better identified after the current field review of existing leases.

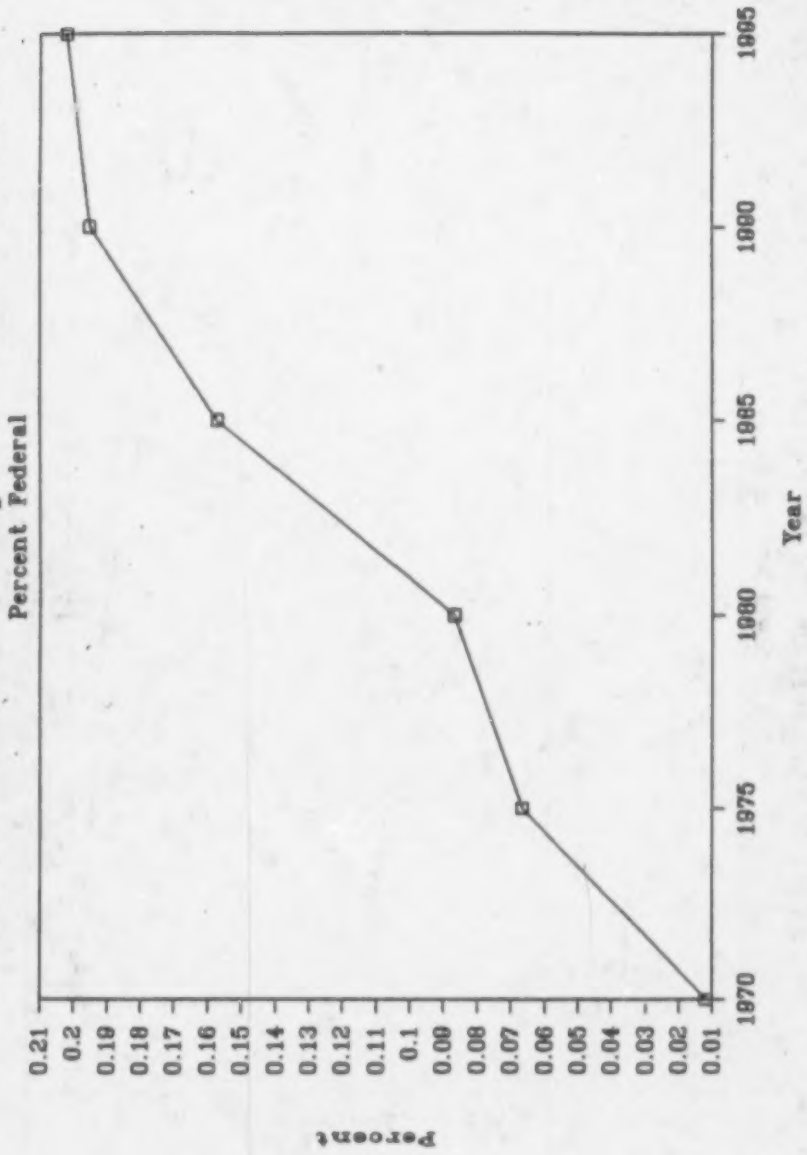
Historical and Projected Production



Historical and Projected Production



Historical and Projected Production



QUESTION 2

The Department has repeatedly stated that one reason for leasing large volumes of new coal is that a significant amount of the coal already under lease cannot be developed because of environmental, economic, and other restrictions. Do you have any analysis which support this conclusion? How much of the coal under lease will never be developed because of environmental regulations? How many separate leases are involved? Where are they? Have diligence requirements for these leases been enforced? Have any of them been forfeited to the government?

ANSWER

Several studies have been done in the last five years investigating the developability of existing coal leases. An unsuitability study was done in the Bureau in 1978. A very extensive study was published by the Office of Technology Assessment in 1981 titled An Assessment of Development and Production Potential of Federal Coal Leases. This study forms the foundation for most of the Bureau's current estimates for development potential. The Bureau's estimates try to account for updated information, new leases, and changes in regulations and economic conditions. The only major adjustment to the OTA study has been that the Bureau assumes that there will not be rail access to Southern Utah. This combined with the demise of the minemouth powerplants in that region severely degrades the development potential of the large amounts of leased coal in the area. The Bureau is currently conducting a lease-by-lease review of all existing leases to make more reliable estimates of development potential. The leasing level analysis done for the Regional Coal Teams in regional sale planning provides additional information as the baseline production capacity reflects development potential of all coal in a region.

The Bureau at this time does not have an estimate of which leases will not be developed just because of environmental regulations. Some leases cannot be developed because of alluvial floor conflicts, other because of air quality problems or potential emissions problems from minemouth plants. With many of these problems there is not an outright prohibition against mining, but the cost of preventing environmental impairment may make the operation uneconomic. The Bureau currently estimates that a minimum of 4 billion tons of reserves cannot be developed for various reasons. This involves almost a third of the existing leases. Much of this is in Southern Utah and portions of the Green River-Hams Fork region. Other leases depend on unexpected transportation developments or synfuel operations. A better estimate should be available after the lease review currently being conducted in the field.

The first lease to be potentially effected by the diligent development requirement will be in 1986. Most Federal leases will not face the diligent development requirement until the 1990's. As such no Federal coal leases have been forfeited due to the diligent development requirement.

As with all laws and regulations, the Department will uphold and enforce the provisions of the diligence requirement as specified by the Federal Coal Leasing Amendments Act of 1976.

QUESTION 3

The Department has adopted a policy of leasing Federal coal to meet industry's demand for reserves. This is a major departure from previous policies of leasing coal to meet demands for production. Can you explain how the Department calculates "industry's demand for reserves"? Does this mean that the Department will offer for lease as much coal as industry will accept? If bonus bids for Federal coal as low as the 3.6 cents per ton received at the Powder River sale are accepted by the Department, won't this policy continue to result in speculative bidding?

ANSWER

The approach by which the Department calculates industry's demand for coal reserves is a new and inexact science. Because of this, the Department uses all information sources that can be reasonably used. The regions production demands are calculated using the National Coal Model (NCM) and other similar models. The coal industry is surveyed to estimate coal inventory requirements. Past long term coal contracting and future contracting are estimated. Industry's expressions of interest are analyzed to try to differentiate between what coal is demanded and what is simply a wish list. An oversupply or undersupply of coal resources on the market will manifest itself in a dramatic drop or increase in the prices (bonus bids) the Department receives for its coal resources.

The Department's objective is to provide for leasing sufficient quantities of coal resources to allow for efficient development. To do this the Department must respond to the market demand for coal reserves. The Department will lease as much coal as industry demands.

A company that pays millions of dollars for the rights to develop a coal deposit in the hopes of making a profit 10 or more years from the time of purchase is speculating. A long term utility coal contract is generally obtained by a coal company after the coal reserves have been acquired by that company. In light of this, any time a company purchases the coal development rights there is speculation that coal can be sold.

Two common ways of comparing the bonus bids to assess the compensation received are on a per acre and per ton basis. A per acre measure has the obvious disadvantage of being a measure of the surface acreage with little relationship to the coal resource that lies beneath. Analyzing the price on a per ton basis is a somewhat better measure. However, coal resources are not homogeneous commodities. The most significant difference is the energy value (BTU) of the resource. Commonly leased Federal coal resources range from a low of 7,000 BTU's per pound in the Fort Union Coal Region to over 14,000 BTU's per pound in the Uinta-Southwestern Utah Coal Region.

An analysis based on cents per BTU captures this difference but does not address many of the other significant differences. The best measures for capturing all these differences is the price in the market place that the coal itself brings. For example, mined coal that has relatively high BTU and low sulfur content will generally receive a higher price in the market place than coal that has a relatively low BTU and high sulfur content. The market price captures, at one time, all the characteristics that add to or subtract from the value of the mined coal.

Table 1, the last column, gives the average high bonus bid for the resources as a percentage of the current mine mouth selling price of coal for the regions where lease sales have been held. For the three larger western sales held to date, the average high bonus bid stated as a percentage of the current selling price of mined coal has remained relatively constant (between .5 and .7 percent of the current market price of coal). This has occurred in spite of the variation in average BTU content (a low of 8,000 BTU's per pound in the Powder River Region and a high of 14,000 BTU's per pound in the Uinta-Southwestern Utah Region), and the chronology of the sales, with the first Green River-Hams Fork sale in January 1981 and the last Powder River sale in October 1982. This consistency in the average high bonus bid is very significant in analyzing claims of overleasing. The average compensation that the Federal Government has received through bonus bids has not been forced down due to overleasing as some critics claim.

Previous analysis of the Department's sales have commonly utilized cents per ton as the unit to compare the bonus bids. This has led to a significant amount of criticism of the recent regional coal lease sales, most specifically the first round Powder River regional sale, as examples of overleasing. Analysis of sale results on a cents per ton basis can be very misleading. (The average consumer would not be deceived into believing a pound of T-bone steak should cost the same as a pound of round steak, even though they are both beef products.) The price that a ton of mined Powder River coal can bring in the market place (\$7.50 per ton) does not compare with the price Uinta mined coal can command (\$28.00 per ton). Given this difference in mine mouth value of the coal, it is only reasonable to assume that the value of the coal resource before mining is also not identical.

By evaluating the sale results for the three Western sales held from January 1981 through October 1982 on a percentage of market price basis, it is clear that overleasing is not occurring. Actually, a case can be made that the opposite is quite possibly true. In the Southern Appalachian Region, Federal coal is a very minor fraction of the total available coal resources. The Department has no monopoly power in this region and must take the market rate for its coal resources or not lease it. As Table 1 shows, the average high bonus bid as a percentage of price is very low (.076 percent) in the one region where the Department's sales cannot significantly influence the market price for coal resources; this information could actually imply that the Department is still underleasing in the western regions and collecting monopoly rents.

TABLE 1
ANALYSIS OF HIGH
BONUS BIDS FROM ALL REGIONAL SALES
(JANUARY 1981 THROUGH OCTOBER 1982)

Region	Total High Bonus Bid (Dollars)	Dollar/Acre	Average High Bonus Bid		Percent of Coal Price 2/
			Cent/Ton	Cent/Million BTU 1/	
So. Appalachian	1,051,256	103	2.29	.092	.076
Green River- Hams Fork	35,700,059	1,318	10.9	.531	.545
Powder River	67,179,066	3,092	4.3	.261	.573
Uinta-SW Utah	19,574,810	1,680	21.88	.888	.775
Total All Regions	123,505,192				

1/ Average BTU/lb. x 2,000 = BTU/ton divided by 1,000,000 = MM BTU/ton divided by cents/ton = cents/MM BTU.
2/ Cents/ton divided by average mine mouth selling price per ton of coal = percent of coal price.

SOURCE: U.S. Department of the Interior, Bureau of Land Management, Division of
Solid Mineral Leasing, Automated Coal Leasing Data System, September 30, 1983,
and Coal Week, McGraw-Hill, Inc., Washington, D.C., February 7, February 14,
February 28 and March 7, 1983, Vol. 9 No. 7 through No. 10.

QUESTION 4

You insist that a greatly accelerated leasing program is necessary to avoid higher consumer costs. This seems to assume that industry does not have access to sufficient amounts of coal to supply this production need. Yet industry has asked the Congress to relax diligence requirements for Federal coal leases, because it cannot develop them under current market conditions. Can you provide the Committee with data which indicates that your leasing program will hold down consumer prices?

ANSWER

The Department's position is based on the economic principle that in a competitive market, prices will be forced downward, squeezing out all excess (monopoly) profits. If the Department restricts the quantity of coal resources offered, higher prices (bonus bids) could be obtained because the Federal Government has the ability to act as a monopolist in the market for coal resources; the Federal Government owns approximately 60 percent of western coal resources and controls another 20 percent by virtue of its land ownership patterns. A policy of restricting the coal supply by restricting the quantity of coal resources offered for sale would not be in the public interest. The demand for coal would be determined in the market place without Federal coal leasing. However, the demand would be satisfied at a higher cost to the consumer. By restricting Federal coal leasing, the western supply of available resources is potentially reduced by 80 percent. As with any commodity, when coal resources become reflectively scarce (not available) the price will increase. With less coal available and less competition among the coal suppliers (coal companies), utilities will pay higher prices for the coal. The higher cost to the utilities is then passed on to the consumer. The cost to the consumer will also be increased under a policy of restricted leasing in situations where the unleased Federal resource is the most cost effective to develop; development of coal resources will occur to meet the consumer demand; however, it will occur on tracts that have a higher development cost.

This point of shifting development intra-and interregionally is very significant. However, the actual quantifying of what the exact shifts will be and what the associated cost to the consumers will be are impossible to accurately estimate.

When a commodity is demanded in a perfectly competitive market, the market will respond by satisfying that demand in the most cost efficient manner. As is already recognized, the coal market is not perfectly competitive, most notably because of the monopoly power of the government. In the case of the coal market when coal is demanded that market will respond by satisfying that demand in the most cost efficient manner available. Unleased Federal coal that is not available cannot compete to satisfy the market demand. With the Department's extensive land-use and activity planning process, it can take 4 years to bring a Federal coal tract to the point that it can be offered for lease. This is far to long a lead time to respond to market forces. The Department recognizes its inability

to know what the exact future of coal demand will be and which tracts are the most cost efficient to meet that demand. The market's ability and central planning's inability to allocate resources effectively is well documented. In response to this, the Department has made a conscious decision to minimize the government's role in allocating coal resources. Within the confines of the Treasury receiving fair market value for the resource, protection of the environment and concerns raised by the State Governors the market will be allowed to determine which tracts will be available to satisfy the demand for reserves.

QUESTION 5

Has the Department conducted any analysis of the potential effects of such an accelerated leasing program on the Eastern coal industry? Thousands of eastern coal miners are out of work. Won't leasing much more western coal simply displace them permanently? Can you supply the committee with any data regarding the regional employment effects of your coal program?

ANSWER

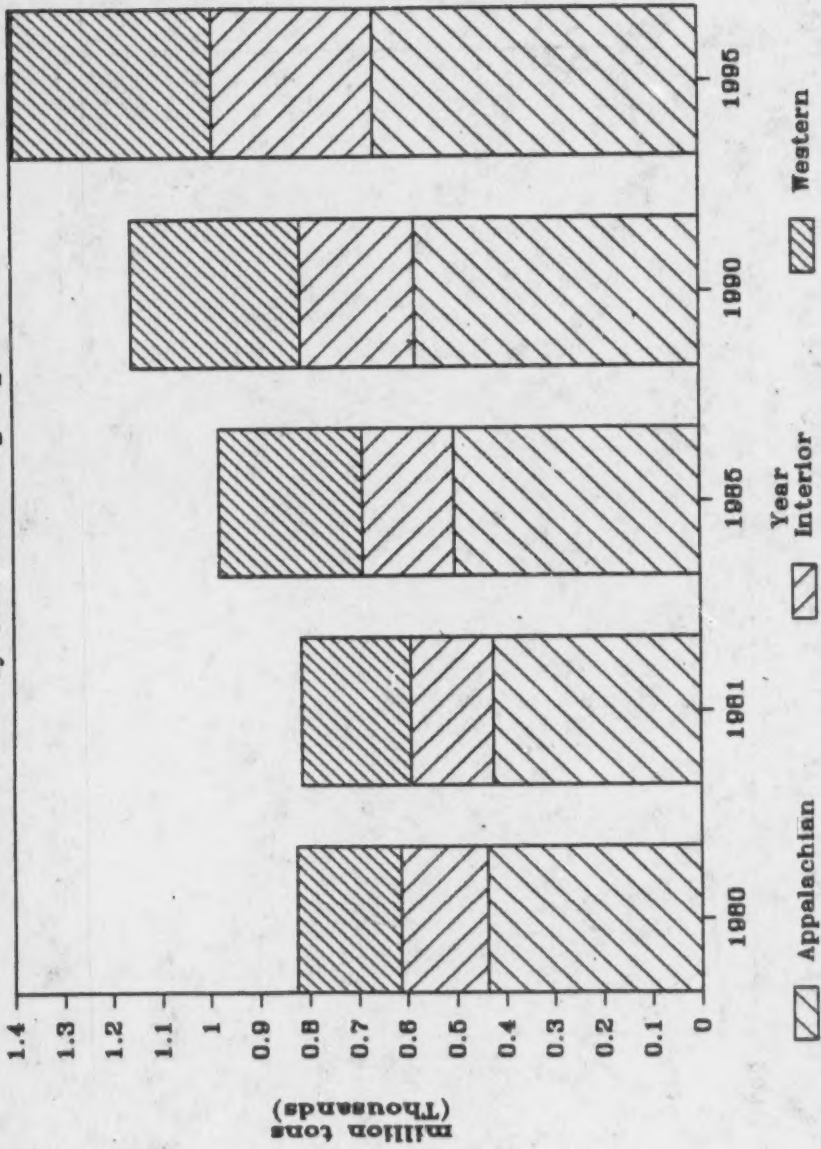
The Bureau's coal production forecasts (see tables) indicate that although the eastern regions will suffer a slight loss in market share of coal production, total eastern coal production will increase substantially. The (central regions') market share will hold steady while absolute production makes significant gains. The western regions gain both in absolute production and in market share. These forecasts assume no restriction on access to Federal coal and yet there is still an increase in the eastern coal industry.

The temporary high unemployment in the coal industry is due to the severe U.S. and world-wide recession. This recession has effected the domestic and export demand for coal, as it has for most manufactured goods. This loss in demand is reflected in high unemployment in those sectors of the economy hardest hit. The assumption that the Federal coal leasing is the course of this unemployment or Federal leasing will make higher unemployment permanent in the east is not supported by the Department's analysis.

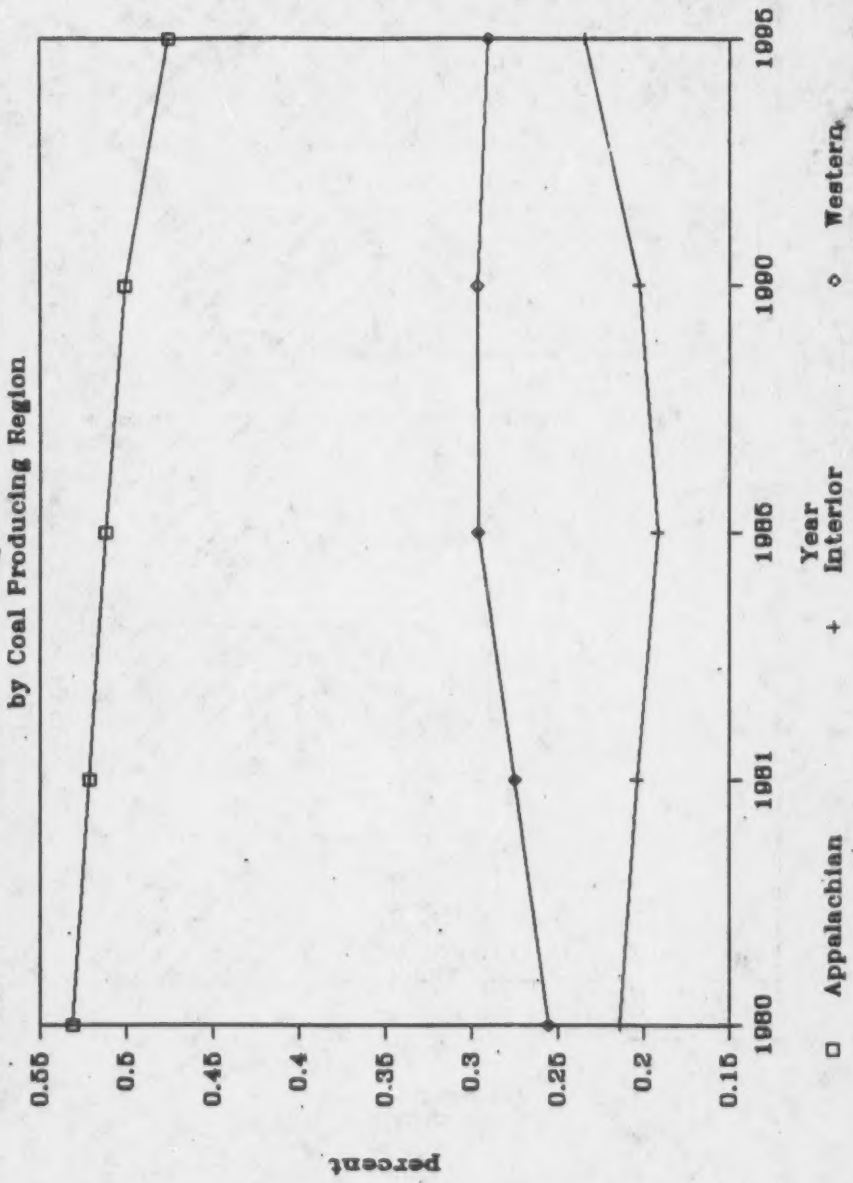
As the Departments projections indicate, with a positive growing coal industry all regions gain. Western growth is naturally greated due to the vast supply of untapped resources in this region.

The Department's only regional employment figures are from the regional EIS's. These EIS's do not however calculate the inter-regional effects on employment. Such effects, if any, would be insignificant. The Fort Union Regional EIS is the only completed EIS for the upcoming sales. Long term employment figures associated with the preferred alternative could be 8,000 to 10,000 new workers. The maximum alternative could result in 12,000 to 15,000 new long term workers. These figures assume full development of all coal tracts.

Historical and Projected Production by Coal Producing Region



Historical and Projected Market Share by Coal Producing Region



QUESTION 6

What analysis did the Department conduct which led to the decision to discard the usual bidding procedures in favor of "entry level bidding" for April 1982 Powder River Basin sale?

Did the Department have data which showed that industry would not bid for the Powder River Basin tracts if the original "minimum acceptable bids (MAB)" were the bidding floor?

Did the Department expect more than one company to bid on the maintenance tracts offered in the Powder River Basin sale? Why were the entry bids for these tracts lowered so dramatically when there was so little likelihood of any competition for them, and therefore little chance that they would be "bid up" during the sale?

ANSWER

The Department's decision to adjust its coal lease sale procedures for the April 28, 1982, Powder River sale was based on concerns about the best methods for achieving fair market value (FMV) for Federal coal leases that date back at least to 1979. The July 1979 coal management regulations (43 CFR 3400) recognized the difficulties inherent in determining the FMV of Federal coal leases. A Departmental task force was formed to prepare a Secretarial Issue Document regarding the determination of FMV for coal leases. This task force specifically noted that FMV for coal leases should steer a course midway between seeking to maximize capture of economic rent and satisfying the minimum legal FMV obligations. The former Secretary adopted this conclusion in his FMV decisions on May 28, 1980.

The concern about proper procedures to set MABs and to determine FMV continued with the change of Administrations. In early 1981, in response to the Secretary's call for the elimination of excessive, burdensome, and counterproductive rules and procedures, a series of issue papers were developed. One such paper called for the use of entry level bids and a revised post-sale analysis for determining FMV.

In early 1982, the Minerals Management Service (MMS) prepared an estimate of the value of the tracts to be offered for sale in the Powder River Region. Consistent with the Department's policy established in 1979, the MMS envisioned that the resulting estimates of value for the individual tracts would be used as minimum acceptable bids. However, it was determined that the estimates were too high for the purpose of entertaining bids for the coal leases. This determination is consistent with standard bidding theory which warns that minimum bids set at a high level can chill bidding competition.

It was determined that for the Powder River sale the post-sale evaluation of the bids received should be modified to incorporate any information gained from the sale itself that improved our understanding of the FMV of the tracts. Shortly after March 2, 1982, when the first pre-sale estimates of tract value were transmitted to Washington for review, and formally through a meeting of senior policy staff of the Department on March 19, the determination was made to publish entry level bids, instead of the pre-sale estimates of tract value, as minimum acceptable bids. The entry level bids were subsequently published in the Sale Notice released to the public on March 25, 1982, and published in the Federal Register on April 1, 1982. The detailed internal procedures to be utilized by the MMS in determining the acceptability of bids were approved by the Under Secretary on April 27. The sale took place on April 28, 1982, as scheduled.

The Department had no data showing that industry either would or would not bid for the Powder River tracts if the original "minimum acceptable bids" were used as the bidding floor. However, the Department had evidence that suggested that the procedures for calculating pre-sale estimates of tract value and using them as minimum acceptable bids may not accurately reflect the existing market conditions. The results of the February 25, 1982, Uinta-Southwestern Utah regional coal lease sale suggested that the minimum acceptable bid, which had been derived from past comparable sales, were too high because three of four tracts received no bids at the sale even though they had received expressions of leasing interest before the sale. In addition, comparable sales data in the Powder River region were from 1980 sales which reflected a stronger coal market than in 1982 and, therefore, resulted in minimum acceptable bids that may have been too high to use as a bidding floor.

The Department did not expect more than one company to bid on the maintenance tracts offered in the Powder River sale. However, it is not correct to state that the entry level bids for these tracts were "lowered so dramatically". Of the six maintenance tracts sold at the April 28, 1982, Powder River sale, the entry level bid was lower than the minimum acceptable bid based on the pre-sale estimate of tract value for only one tract, the Little Rawhide Creek tract. The entry level bids were the same as the minimum acceptable bids for the other five tracts. The entry level bids for two maintenance tracts that were offered but not sold, the North Decker and Spring Creek tracts, were lower than the minimum acceptable bids but the tracts received no bids even at those lower entry levels.

QUESTION 7

I understand that the final decisions regarding the tracts to be offered in the July Ft. Union coal sale have not been made. However, the Regional Coal Team has recommended that 600 to 800 million tons should be leased, including three new production tracts.

This is difficult to understand because the Montana State BLM Director has been quoted as saying that there is no industry interest in the tracts. According to the Billings Gazette, the State Director said that "he suggested the sale of those tracts to make a sale bid enough to meet the minimum tonnage requested by Washington Interior officials, even though these are tracts that industry isn't interested in". He also is quoted as saying that "the basic approach of the Secretary now is to get a lot of coal out in private hands so a number of companies can start competing with it".

If the Fort Union sale goes forward in July, will these tracts be offered? If bids are received on these tracts, do you expect that they will represent the fair market value of the reserves? If no bids are received for these tracts, will the Department then assume its estimates of the fair market value of those tracts in any subsequent lease sales?

ANSWER

In June 1981, the Regional Coal Team (RCT) recommended a preferred leasing target of 0.4 to 0.8 billion tons of Federal coal along with a number of other alternative leasing ranges.

On December 8, 1981, the Assistant Secretary for Land and Water Resources set a final Federal leasing level of 0.8 to 1.2 billion tons of recoverable coal for the Fort Union Coal Production Region. In part, the target was based on the Department of Energy's (DOE) final coal production goals, industry interest, probability of development of the Federal coal (see table below), and the RCT recommendations. Governors of both Montana and North Dakota concurred with this decision.

DOE 1995 PRODUCTION GOAL
FORT UNION COAL PRODUCTION REGION
(Million Tons Per Year)

LOW	MEDIUM	HIGH
53.9	85.9	105.9

Due to the factors listed above the RCT's recommended alternative (0.4 to 0.8 billion tons) was not selected by the Assistant Secretary. The Assistant Secretary selected the next higher leasing alternative of 0.8 to 1.2 billion tons of Federal coal after considering that little margin for error is allowed by a leasing of 0.4 to 0.8 billion tons, which was barely

enough to cover DOE's "low" to "medium" production goals. The RCT's recommended leasing level would probably be insufficient to meet future demands if electric power growth rates increased significantly and synthetic fuels came on line faster than projected, if the Fort Union Region captured a larger share of the domestic market than anticipated, or if production from some existing Federal coal leases did not occur.

More recent forecasts reflect the recession and reduced oil prices. The range of production forecast for the Fort Union Region in 1995 is 35 to 50 million tons per year. The figure of 35 included approximately 5 million tons for synfuels. Other estimates for synfuels production expand the forecast to 50 million tons per year.

At this time, no decision has been made as to whether or not the tracts in question will be offered. If offered, and bids are received on these tracts, they will be evaluated to determine if the bids represent fair market value. If fair market value is not received, the bids will be rejected.

The Department intends to offer leases at a minimum bid of \$100 per acre, the regulatory minimum, regardless of the Department's pre-sale estimate of value. The Department's pre-sale estimates of values will remain confidential and industry will be expected to submit bids that represent their best estimates of value. If no bids are received for a tract offered at the \$100 per acre regulatory minimum bid, the Department's pre-sale estimate of value for that tract is rendered moot. Obviously industry would not be interested in such a tract even at \$100 per acre, and the Department's own regulations prevent offering the tract, or accepting a bid, at less than \$100 per acre. If the tract is reoffered in a subsequent sale, and if it receives a bid, then the Department will examine that bid in light of the original pre-sale estimate of value and any other pertinent information to determine whether the bid constitutes fair market value.

QUESTION 8

The Governor of New Mexico recently wrote the New Mexico State BLM Director regarding the proposed San Juan coal sale scheduled for December, 1983. The Governor recommended postponing competitive leasing in San Juan Basin until the depressed coal market improves and leasing becomes more economically viable. The Governor also stated that if the Secretary insists upon holding the scheduled sale, that determinations of fair market value should be made prior to the sale, and that only by-pass tracts should be offered in the first round.

Has the Department responded to the State of New Mexico's concerns? Are plans for the San Juan sale being revised?

ANSWER

Formal response to the State of New Mexico concerns will appear in the Final San Juan River Regional Coal Environmental Impact Statement, pursuant to 40 CFR 1503.4. Plans for the San Juan River regional coal lease sale, like all other regional coal lease sales, are constantly under review by the Department. Plans include coordination with the Governors, and comments are also sought from affected parties and the general public. Adjustments are continually made to allow for consideration of these comments and of new data. The San Juan Regional Coal Team has recommended that the Secretary change the leasing level to 800 to 900 million tons, with the understanding that the State is in favor of leasing bypass tracts and tracts with demonstrated commercial interest but also having minimal adverse socioeconomic and environmental impacts. The Department expects to be able to officially adopt the regional coal team's recommendation as one response to the State's concerns. The Department is also working closely with the State of New Mexico on the study of fair market value for preference right lease applications in response to a request from the Governor. The San Juan River regional coal lease sale date is only for planning purpose and is not and never has been a firmly committed date. The decision on whether any tracts will be offered for sale in this region will not be made until after the Department has studied the results of the final environmental analysis and recommendations from the regional coal team, the Governor of New Mexico, and the Indian tribes affected by the proposed action. Plans will also be revised as necessary to accommodate any unforeseen developments.

QUESTION 9A

How many Preference Right Lease Applications (PRLA's) are pending?

ANSWER

There are 136 PRLA's pending.

QUESTION 9B

How much coal is involved in these lease applications?

ANSWER

The 136 pending PRLA's contain an estimated 6.85 billion tons of recoverable reserves. This is a preliminary estimate because BLM either does not have final showing data or has not verified the applicants estimates of reserve data.

QUESTION 9C

What are the Department's plans for processing these applications?

ANSWER

A copy of BLM Information Memorandum No. 83-169, Procedures for Processing Preference Right Coal Lease Applications (PRLA's) is attached.

QUESTION 9D

Is the Department thoroughly reviewing the validity of the original prospecting permits upon which the PRLA's are based before deciding whether to grant each lease?

ANSWER

Section 2(b) of the Mineral Leasing Act of 1920 (MLA), 30 U.S.C. §201(b) (1976)(repealed) authorized the Secretary to issue prospecting permits to determine the existence of workability of coal deposits in "unclaimed undeveloped" areas. On January 8, 1981, the former Solicitor, Clyde O. Martz, issued Solicitor's Opinion M-36893 (Supp. II) entitled "Effect of Mining Claims on Secretarial Authority to Issue Prospecting Permits and Preference

Right Leases for Coal and Phosphate (Modifying Solicitor's Opinion M-36893 of August 2, 1977, and its Supplement of November 19, 1979, upon the same subject): The Unclaimed, Undeveloped Issue", 88 I.D. 247 (1981). The Solicitor concluded that the limitation in section 2(b) of the MLA applied only to conflicts with valid, unpatented mining claims that are adverse to or in conflict with interest sought or obtained by a prospecting permit or preference right lease. The existence of adverse interest is to be shown by the records of the Federal Land Office at the time of permit or lease issuance. In the absence of such adverse interest appearing in the records, the prospecting permit must be presumed to be regular. A prospecting permittee or a lessee would be subject to the loss of the permit or lease rights due to subsequent assertion of prior, superior adverse rights. Since January 1981, the Bureau has been following the direction given by the Solicitor in this Opinion. Prior to issuing a preference right lease, the Bureau examines its records to see if any adverse claim exists for the land sought to be leased. In the absence of disclosure of any such interest the lease will be issued, if otherwise regular. Previously issued prospecting permits are likewise screened, as part of lease application adjudication, to determine the existence of adverse claims existing of the date when the permit was issued.

We are not aware of any circumstances or situation where a coal prospecting permit was issued on lands where both the existence and workability of coal deposits was clearly known. For further detail, please see the attached March 31, 1983, letter to the Natural Resource Defense Council and the National Wildlife Federation.

QUESTION 9E

In deciding whether a PRLA meets the "commercial quantities" test for awarding a lease, does the Department consider the costs of reclamation and of compliance with environmental regulations? Shouldn't these costs be included in an assessment of a coal deposit's commercial viability?

ANSWER

The procedures for adjudicating "commercial quantities" for preference right lease applications (PRLA's) are contained in 43 CFR 3430.4-1. Costs considered include development, mining, processing, transportation, royalties and taxes, and reclamation costs, as well as costs to comply with proposed lease terms and special stipulations. Reasonable surface owner consent costs, where the surface is privately owned, would also be taken into account to make the commercial quantities determination.

QUESTION 9F

New Mexico Governor Anaya urged the Secretary to use his discretion to recover fair market value for preference right leases, and to make these fair market value determinations before the leases are issued. Is the Department taking steps to recover fair market value for preference right leases with particularly high value?

ANSWER

The San Juan River Regional Coal Team (RCT) has formed a subgroup to prepare a report on increasing the revenue on PRLA's to recover fair market value. The subgroup is composed of BLM and State representatives from New Mexico and Colorado. The subgroup is chaired by the State of New Mexico and will present the report at the next RCT meeting.

The subgroup report will recommend whether and to what degree the annual rental should be increased from the minimum to reflect fair market value. The report will also discuss how the increased revenues can be used for impact assistance.

(PRLA's)

Step
No.Action/ProcedurePolicy/Comment

1

Determine if the application conforms to the requirements of the Mineral Leasing Act of 1920 as amended;

Note: See "scope"
43 CFR 3430.0-7

1. Validity of original PRLA per 43 CFR 3530 effective 6-13-70 and 5-7-76 (formerly 43 CFR 3130). Reject the PRLA in accordance with 43 CFR 3430.5-1(a)(3) if:
 - (a) Not timely filed
 - (b) Not accompanied by 25 cents per acre for first years rental.
 - (c) Not signed by authorized party
 - (d) Evidence of discovery of coal in commercial quantities not submitted with application if confirmed by, as appropriate, the U.S.G.S. MMS or BLM.
2. Adequacy of "initial showing" per 43 CFR 3430.2-1. Reject the PRLA for the following defects in accordance with 43 CFR 3430.5-1(a)(3).
 - (a) Not filed
 - (b) Not timely filed

Rental fees for leases issued after PCLAA must reflect the \$3.00 per acre minimum rental (i.e. the applicant must be billed for the difference between the old per acre rental rate and the new rate before issuing a lease

2

Determine compliance with the Solicitor's Opinions M-36893 (existence of mining claims prior to permit issuance) and M-36893 (supp), and the Solicitor's memorandum of January 8, 1981, concerning the "unclaimed, undeveloped" issue.

1. Determine which lands in each smallest legal subdivision of the PRLA contain valid, adverse mining claims(s) as shown in the official land records at the time of permit issuance (Mining claims should be considered adverse if they were located before the permit or lease and before August 13, 1954, the effective date of the Multiple Mineral Development Act). Delete the entire subdivision affected by valid, adverse mining claims. See 43 CFR 3430.5-1(b). Tabulate the acreage of

Section 3430 is amended to include the Solicitor's opinion which construed the language of section 2(b) of the Mineral Leasing Act, prior to its amendment in 1976 (30 U.S.C. 201 (b) 1970), authorizing the issuance of coal prospecting permits only on unclaimed, undeveloped land. Section 3430.5-1 revised. Permits issued

Enclosure 1-1



United States Department of the Interior

BUREAU OF LAND MANAGEMENT
WASHINGTON, D.C. 20240

QUESTION 9C

April 4, 1983

Information Memorandum No. 83-169
Expires 9/30/84

To: All SD's, SCD

From: Director

Subject: Procedures for Processing Preference Right Coal Lease
Applications (PRLAs)

The enclosed procedures for processing PRLAs are updated and revised to reflect the July 30, 1982, and January 12, 1983, revisions to the Federal Coal Leasing Regulations (43 CFR 3400) and the organizational restructuring of the Department of the Interior's mineral management functions. Should you have any questions concerning this guidance, contact John Carlson (FIS 343-6821) in the Branch of Coal Operations.

A handwritten signature in cursive script, reading "Robert H. Lawton".

Assistant Director, Solid Leasable Minerals
Acting

1 Enclosure:

Enclosure 1 - Processing Procedures for Coal Preference Right Lease
Applications (6 pp)

(FRLA's)

Step
No.Action/ProcedurePolicy/Comment

1

Determine if the application conforms to the requirements of the Mineral Leasing Act of 1920 as amended;

Note: See "scope"
43 CFR 3430.6-7

1. Validity of original FRLA per 43 CFR 3430.5-1(a)(3) if:

- (a) Not timely filed
- (b) Not accompanied by 25 cents per acre for first years rental.
- (c) Not signed by authorized party
- (d) Evidence of discovery of coal in commercial quantities not submitted with application if confirmed by, as appropriate, the U.S.G.S. MMS or BLM.

Rental fees for leases issued after FRLA must reflect the \$3.00 per acre minimum rental (i.e. the applicant must be billed for the difference between the old per acre rental rate and the new rate before issuing a lease)

2. Adequacy of "initial showing" per 43 CFR 3430.2-1. Reject the FRLA for the following defects in accordance with 43 CFR 3430.5-1(a)(3).

- (a) Not filed
- (b) Not timely filed

2

Determine compliance with the Solicitor's Opinions M-36893 (existence of mining claims prior to permit issuance) and M-36893 (supp), and the Solicitor's memorandum of January 8, 1981, concerning the "unclaimed, undeveloped" issue.

1. Determine which lands in each smallest legal subdivision of the FRLA contain valid, adverse mining claims(s) as shown in the official land records at the time of permit issuance (Mining claims should be considered adverse if they were located before the permit or lease and before August 13, 1954, the effective date of the Multiple Mineral Development Act). Delete the entire subdivision affected by valid, adverse mining claims. See 43 CFR 3430.5-1(b). Tabulate the acreage of

Section 3430 is amended to include the Solicitor's opinion which construed the language of section 2(b) of the Mineral Leasing Act prior to its amendment in 1976 (30 U.S.C. 201 (b) 1970), authorizing the issuance of coal prospecting permits only on unclaimed, undeveloped land. Section 3430.5-1 revised. Permits issued

Enclosure 1-1

Step
No.

Action/Procedure

Policy/Comment

claimed lands to be deleted from the PMLA and prepare a land description and acreage figure for the remaining unclaimed portion of the PMLA lands.

2. If the review shows a valid mining claim(s) on any legal subdivision(s), issue a decision informing the applicant of his right to challenge the validity of the claim(s) and also informing him that if contest is not initiated within (Specify time), the application will be rejected as to such subdivision(s).

in violation of the unclaimed, undeveloped limitation of the statute and those defective for failure to meet other requirements will be rejected.

The January 8, 1981, Solicitor's opinion states that a prospecting permit and preferential right lease must be assumed regular if, at the time of permit issuance, there was no record of adverse claim to the coal in the official land status records. The opinion further limits the M-36893 opinion to conflict with valid, unpatented mineral claims adverse to or in conflict with the prospecting permit or preference right lease. The absence of adverse records will indicate only that the permit or lease was properly issued. The applicant must still challenge claims not revealed in the official land records if the claimant asserts his right.

3 Upon completion of Step 2 above determine whether the applicant has made an "initial showing" pursuant to 43 CFR 3430.2-1. The "initial showing" determination must be made fully considering claimed lands to be omitted and un-reclaimed lands to be included.

4 If a determination cannot be made because of omissions or lack of adequate information, issue a notice allowing the applicant 60 days to submit additional information (43 CFR 3430.2-2(b)). An additional 60 day extension may be granted if requested by the applicant

Section 3430.2-2 is amended to allow the authorized officer to request other information.

Section 3430.2-2b is revised to allow the authorized officer to give lease applicant an extension of time to supply complete initial showing a unclaimed and undeveloped

Enclosure 1-2

Step
No.Action/ProcedurePolicy/Comment

within the first 60-day period. Failure to submit the requested information would result in the PRLA being rejected without further notice per 43 CFR 3430.3-1(a)(2).

- 5 Issue a decision rejecting any PRLA where the applicant fails to demonstrate the existence of commercial quantities. Allow a 30-day period for appeal (43 CFR 3430.3-2).

Section 3430.3-1(a). Authorized officer may reject on the ground that applicant failed to meet commercial quantities test.

- 6 Where the applicant demonstrates commercial quantities, request the Planning and Environmental Coordination Staff to prepare a status report on the application which considers the following:

1. Is the PRLA compatible to an adequate land use plan?
2. If not compatible when is the land use plan scheduled for completion?
3. If no land use plan, when is the land use plan scheduled for completion?
4. Has the PRLA been included in any EA or EIS?
5. Has the PRLA been scheduled for processing in the cycle of an on-going comprehensive land use plan? If so, what is the completion date?
6. Has the PRLA been considered by the Regional Coal Team? If so, what is the status?

Request the Division of Resources to prepare a status report on the application concerning any applicant requests to have his/her application processed aside from the cycle of on-going comprehensive land use plans. See 43 CFR 3430.3-1.

The Secretary's decision to process non-competitive lease applications in the cycle of on-going land use plans unless application would not be processed by 12-1-84. It is each lease applicant the opportunity to ask the authorized officer when its application will be processed and to explain how earlier processing of the application will benefit the applicant. If the applicant can show that processing the application the normal cycle of land use planning will cause the applicant substantial hardship, the Department will, if possible, advance the time for processing the application.

Enclosure 1-3

- 7 Receive status reports requested in Step 6 above. Prepare a status report with recommendations requesting the State Director to determine the priority for further processing of the application.
- 8 Receive State Director's decision on the priority for processing the FELA.
1. Request the Planning and Environmental Coordination Staff to apply the unsuitability criteria, in the cycle of on-going land use plans or apart from the cycle of on-going land use plans. Also request preparation of an environmental analysis.
 2. If the surface management agency is other than BLM, request that agency to prepare the environmental analysis and apply the unsuitability criteria; also request the Planning and Environmental Coordination Staff to coordinate with the surface management agency.
- 9 Receive the environmental analysis requested in Step 8 above and:
1. Determine technical adequacy of: (1) the EA or ES, and (2) the unsuitability analysis and ensure compliance with all applicable laws and regulations.
 2. Update EA to incorporate review comments and changes.
 3. Distribute copies of revised EA to the Governor, the public, and other interested parties.
- 10 Hold a public hearing on the EA and unsuitability analysis.
- 11 Prepare final EA and decision document, or schedule an EIS, if required.
- 12 Determine the terms, conditions and bonding requirements and prepare a proposed lease with stipulations, after receiving the approved EA and the case file from the reviewing officer.

The final rulemaking continues to bar mining which cannot be done in accordance with the unsuitability standards and to require a preference right lease to include all current lease terms and requirements.

Enclosure 1-4

- 13 Issue a decision, enclosing a copy of the EA or EIS and proposed lease and other pertinent information, allowing the applicant 90 days from receipt of decision to submit a "final showing" per 43 CFR 3430.4-1. Failure to comply would result in the FELA being rejected without further notice. 43 CFR 3430.5-1.
- 14 Receive "final showing" information from the applicant.
1. If submission is apparently complete (i.e., satisfies 30 CFR 3430.4-1(c), initiate a technical evaluation to determine if the applicant has found coal in commercial quantities within the term of the permit. 43 CFR 3430.1-1 and 3430.1-2. Determination of the adequacy of commercial quantities will be based on review of the applicants submittals pursuant to 43 CFR 3430.2-1 and 3430.4-1. The review must take into account judicious business practice, standard industry operating practices, and the "prudent man" concept (43 CFR 3430). Marketability will be determined based on these factors and the content of the applicants submittals.
- 15 Based on technical evaluation:
1. Issue a decision allowing the applicant 60 days from receipt of decision to submit additional information (43 CFR 3430.4-2). Failure to comply would result in the FELA being rejected without further notice per 43 CFR 3430.5-1; or
2. Issue a decision rejecting the FELA, allowing the applicant 30 days to appeal (43 CFR 3430.5-2); or

3. Issue a letter to the applicant requesting consideration of exchange (43 CFR 3430.5-4) if the applicant has discovered commercial quantities of coal, but issuance of a lease or portion of the lease area has been determined not to be in the public interest per 43 CFR 3435; or
 4. Issue a decision allowing the applicant 30 days from notice to execute four copies of the lease, additional rental, if required, and to submit the required lease bond. Failure to respond would result in the FRLA being rejected without further notice. Also notify Department of Justice of intention to issue lease.
- DOJ will not conduct antitrust reviews of preference right leases. ELM has agreed, however, to notify DOJ of impending lease issuances.
16. Issue the lease effective on the first day of the month following the date of execution by the authorized officer, or on the first day of the month of such execution upon applicant's request.
 17. Enter lease data into Automated Coal Lease Data System.



United States Department of the Interior

BUREAU OF LAND MANAGEMENT
WASHINGTON, D.C. 20240

WE REPLY ASAP TO YOU

3430 (541)

MAR 31 1983

Ms. Johanna R. Wald and
Ms. Laura B. King
Natural Resources Defense Council, Inc.
25 Kearny Street
San Francisco, California 94108

Dear Mesdames:

We have received the letter of February 8, 1983, from you and the National Wildlife Federation in which you present the preliminary results of an examination of all environmental analyses prepared to date on preference right lease applications (PRLAs). The letter expresses several concerns about our processing of PRLAs and requests that the Bureau of Land Management (BLM) halt further PRLA processing until it develops a comprehensive program for administering PRLAs.

We look forward to your detailed analysis of the content of specific environmental documents reviewed and your continued exercise of the right to comment on the draft documents that BLM prepares. In the meantime, we provide you with general responses to the points raised. Responses are provided in the order in which your letter raises concerns.

First, you suggest that BLM halt further processing of PRLAs until program deficiencies are remedied. Your concerns center around the degree to which the BLM is complying with the National Environmental Policy Act of 1969 (NEPA) in the environmental analyses prepared prior to issuing preference right leases or rejecting PRLAs. The BLM is always receptive to suggestions on improving the quality of its environmental documents; however, we do not believe, based on the concerns expressed in your letter, that shutting down the PRLA program is warranted.

Many PRLAs have been in processing since the mid-1960's. Because of the long processing times for them, the July 1979 regulations stated and the July 1982 regulations reaffirmed the policy that all PRLAs would be completed to the decision point - issuing the preference right lease or rejecting the application - by December 1, 1984. The Department is committed to this date and has entered PRLA processing in the Management by Objectives system. We believe that preference right lease applicants deserve a decision on their applications in a reasonable period of time. Delays beyond December 1, 1984, would be, we believe, unreasonable.

Ms. Johanna H. Wald and Ms. Laura B. King

2

Second, you believe that BLM is failing to prepare environmental impact statements (EISs) in circumstances where they should be written. In the absence of specific examples we can only provide you with a general response. In many cases, PRLAs are doubly analyzed by BLM: first, the cumulative and regional impacts of issuing the leases are discussed in regional EISs for regional coal sales in areas where PRLAs are located, and second, the impacts of mining a specific lease are discussed in site-specific environmental assessments (EAs) when additional impact analysis is required. Whether or not EAs or EISs or both are prepared for all PRLAs, we believe that all environmental analyses prepared fully comply with NEPA and its implementing regulations.

Third, you describe a number of areas in which you believe the environmental analyses to be inadequate. These areas include what you believe to be incomplete discussions of alternatives. You suggest that alternatives should include delay, lease exchange, lease cancellation or withdrawal in addition to "no action" and "lease issuance."

In the majority of environmental documents we know of, the "no action" alternative is rejection of the PRLA. In some cases, the "no action" and "lease issuance" options are the only reasonable alternatives at the time of EA or EIS preparation. Lease exchange is an alternative to preference right lease issuance, but generally there is no specific exchange proposal available to analyze nor has the applicant generally expressed an interest in an exchange. Thus, the "no action" (rejection) discussion covers the impact of exchanging the lease or lease application, namely, no mining on the site. The only aspect of an exchange not expressly treated is examining the impacts of mining a specific exchange site. This is unnecessary in most cases since any "exchange" reasonably proposed under current authority involves bidding rights (issued under 43 CFR Subpart 3435) that could be applied to any bonus owed on any coal lease sale. Any other tract held for competitive sale will have undergone regional EIS or specific EA or EIS analysis before being issued. Again, in the absence of a proposal for exchange, BLM would have to engage in the rawest speculation about where the bidding rights would be exercised, where those impacts would be. In many cases, the motive to discuss exchange does not exist because there are no specific resource conflicts that make exchanging rights a reasonable alternative. In those cases where specific resource conflicts do render exchange a reasonable alternative, it is one. We look forward to any comments your groups may have on the determination of how to resolve resource conflicts on public lands.

With respect to exchange alternatives, in the case where Congress did authorize exchange leasing involving PRLAs, the alternative was fully explored as part of the Uinta-Southwest Utah Coal Production Region EIS (INT FES 81-10).

Ms. Johanna H. Wald and Ms. Laura B. King

3

You seek the inclusion of a "lease cancellation" alternative in our NEPA documents on PRLAs. We assume that you mean a "lease application rejection" alternative. As discussed above, lease rejection is really what we study as the "no action" alternative. Lease cancellation could only follow lease issuance (an alternative discussed in all EAs) and breach of the lease by the lessee (30 U.S.C. § 88(u)). We believe that the reasonable, related alternatives are thus discussed.

You also seek consideration of a "withdrawal" alternative on all these documents. The BLM has found it impossible to establish "withdrawal" as a reasonable alternative in light of these facts. The BLM's (the Secretary's) withdrawal authority -- section 204 of the Federal Land Policy and Management Act (FLPMA), 43 U.S.C. § 1714 -- speaks only to closing land to title disposal, not mineral leasing or leasing generally, and in any event it can only be exercised "subject to valid existing rights" under section 701 (h) of FLPMA 43 U.S.C. § 1701 note. However else PRLA's are characterized, they are treated by Congress (in section 4 of the Federal Coal Leasing Amendments Act (FCLLA), 90 Stat. 1085, amending section 2(b) of the Mineral Lands Leasing Act (MLLA) of 1920) and by the Department (see Solicitor's Opinion M - 36910 (supp.), 86 I.D. 89 (1981)) as valid existing rights. They are first, the right to an adjudication of whether an entitlement to a lease has been earned or not under current standards; and second, if a commercial quantities determination under these standards is made, a right to a lease. A withdrawal subject to valid existing rights simply cannot affect valid existing rights. If a withdrawal would not alter the status quo, it appears fruitless to attempt to analyze it as a discrete alternative in NEPA documents.

You also believe that the environmental documents reviewed do not contain or discuss adequate mitigating measures and do not contain the information needed to make commercial quantities determinations, particularly cost of compliance with lease terms. In response, we point out the following.

Because of the sequence of procedures by which PRLAs are processed, the applicants's submission of information on costs of compliance, and BLM's evaluation of it, does not occur until after the environmental analyses are complete. Each EA or EIS contains, discusses and develops recommendations for environmental mitigating measures which are then included in a draft lease sent to the applicant as part of the final showing. Other terms included in each lease are required by law or regulation. Thus, the EA or EIS is only one of the documents upon which the applicant must determine costs of compliance and show that, based on the lease terms given, coal can be produced in commercial quantities from the leasehold. These procedures are as you know essentially unchanged from May 1976, although they were recodified from 43 CFR Subpart 3520 to Subpart 3430 in 1979. If leases issue from the applications, the lessees are bound by all existing laws and regulations.